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THE MODERN HOSPITAL

A Monthly Journal Devotea to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

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THE NEW SAMARITAN HOSPITAL OF TROY, N. Y.

A Definite Group, Planned to Be Built by Units—Flexible Enough to Meet Any Conditions, and Arranged With a View to Convenience and Economy of Administration.

By JAMES OTIS POST, of George B. Post & Sons, Architects, New York, and S. S. GOLDWATER, M. D., Consultant, New York.

THE ARCHITECTURE.

BY JAMES OTIS POST.

THE first problem which presents itself to the architect is to arrange an elastic group plan which may be capable of being built in units and later developed still farther by units. The size, shape, and orientation of the lot is therefore of primary consideration when studying the general group plan. The wings of the ward buildings should, if possible, be planned so as to receive the maximum sunlight from the southeast to the southwest.

After carefully studying the lot obtained by the Samaritan Hospital, it was determined that the wings of the ward buildings should face People's avenue, which gives them an almost due southerly exposure, and that no buildings should be built between the ward buildings and People's avenue, in order that light and air would not be obstructed.

The first unit to be built is illustrated in heavy line in the block plan which accompanies this article, and the future extension of each unit in dotted line.

The administration building faces Beman Park on the west, and is in direct communication with the principal buildings of the group—on the one side the ward buildings, and on the other the nurses' home, with its tennis courts, etc. The power house, laundry, and garage are grouped in one building, with service courts, etc. The help's dormitory is conveniently located in the center of the lot. The contagious ward building is isolated from the other buildings of the group.

The main entrance driveway is from People's avenue adjacent to Beman Park, the principal entrance to the administration building being under cover of a porte-cochere. The ambulance driveway is planned to ultimately enter the center of the group from Burdette avenue, with a service entrance also from Burdette avenue beyond the contagious ward building. As Burdette avenue is not yet paved, the present ambulance and service drive is arranged to enter from People's avenue beyond the female ward building, which driveway will necessarily be closed when the future extension to the ward buildings is made.

The style of architecture adopted for this group of buildings is that of the English Renaissance of the Georgian period, in order to give to the buildings a cheerful domestic character rather than the cold formality which is commonly found in institutional buildings.

The materials used in the exterior are buff Indiana limestone and wire-cut brick laid up with unusually wide joints to produce the desired color and texture; the cornice and trims of the buildings are of terra cotta in imitation of the limestone.

The group of buildings, situated on the top of a hill, treated in this manner give a very pleasing effect, which is illustrated by the accompanying sketches.

The planning of the various units of this hospital were carefully worked out by the architects in consultation with Dr. Goldwater as expert in hospital management, and have many interesting features, which are discussed by Dr. Goldwater.

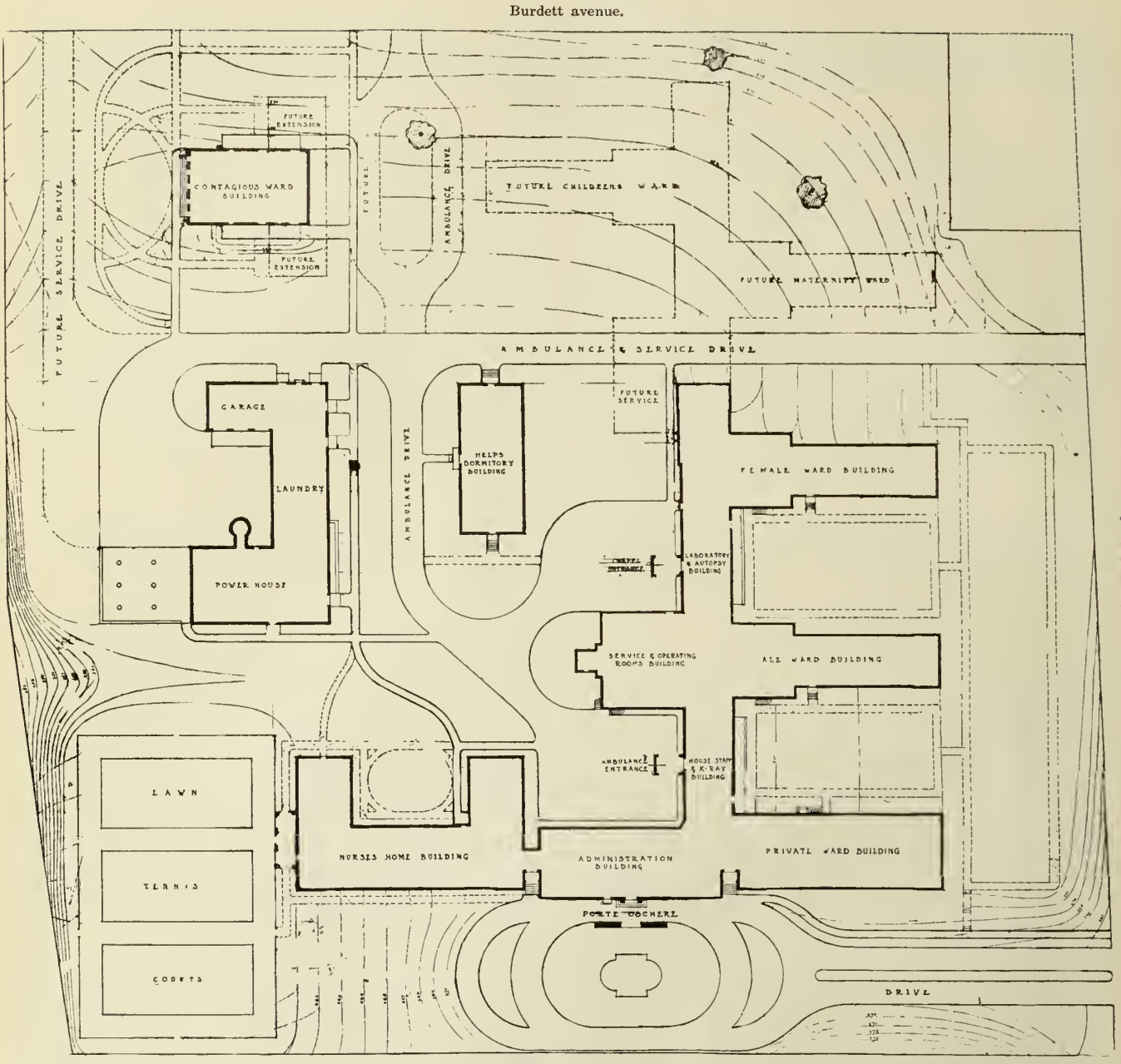

Fig. 1. Samaritan Hospital—General ground plan.

THE GROUPING AND ARRANGEMENTS.

BY DR. S. S. GOLDWATER.

In the grouping of its buildings, in its facilities for the treatment of patients of different social classes, in the plan and equipment of its nurses' home, and its generously planned servants' dormitory building, the Samaritan Hospital is characteristically a modern American hospital, differing in plan, scope, and content both from typical European hospitals and from American hospitals of the previous generation.

Every institution of this kind possesses a certain purely architectural interest, and a guide to the architectural composition of the group will be found in the accompanying notes, prepared by Messrs. George B. Post & Sons, architects, with whom the writer collaborated as consultant in the preparation of the plans. The following paragraphs refer especially to those features of the hospital which have a bearing on hospital administration and hospital economy.

The buildings comprised in the hospital group are a ward building for female patients, with a dependent unit for children; a ward building for male patients; a composite structure attached to the main corridor, containing kitchen, dining rooms, operating rooms, pathological and clinical laboratories, radiographic department, hydrotherapeutic department, and quarters for the resident staff; the Van Schoonhoven pavilion for pri-

Fig. 2. Samaritan Hospital—Birdseye view of the group of buildings. George B. Post & Sons, architects.

vate patients; an "administration" building containing offices and reception rooms, out-patient department, pharmacy, and on the upper floor accommodations for private patients; the Thurman Memorial or nurses' home; the servants' dormitory; the power house and laundry; and the Price Memorial or isolation building for contagious diseases. The relation of these buildings to each other and the location of various entrances and exits merit brief attention.

The buildings are grouped for service and not for display. An imposing entrance might easily have been designed and located at the center of the south front, facing the boulevard, but such a plan could have been adopted only at the expense of utility and of comfort. In the plan actually

Fig. 3. Samaritan Hospital—Administration and private ward buildings. George B. Post & Sons, architects.

adopted the entire south front was preserved for the use and occupancy of patients, an arrangement having very obvious advantages.

Three buildings or wings which extend from the central corridor toward the south are, from left to right or from west to east, the Van Schoonhoven building for private patients, the male ward building, and the female ward building. Each terminates at the south in a broad porch between which and the street there is a clear margin of 80 feet, a distance which permits the free use of the porches by convalescent patients—or, for that matter, by patients who are in bed—without any loss of privacy. Viewed from the boulevard, the ward buildings, with their massive terminal porches, present a pleasing architectural composition, while the patients' outlook from the wards and porches, over the hospital lawn, the adjacent boulevard, and the neighboring country, is altogether delightful. These buildings are two stories in height, and the distances between them are considerably greater than the height of the buildings themselves. The main wards are exposed east, south, and west, and all of the smaller wards and rooms are exposed to the direct rays of the sun during some part of the day.

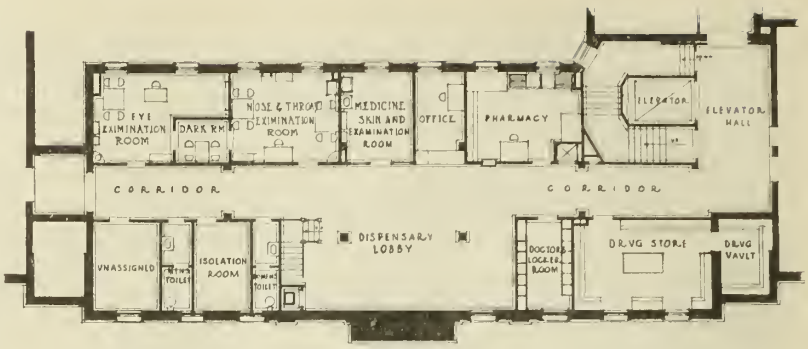

Fig. 4. Samaritan Hospital—Administration building. Basement floor plan.

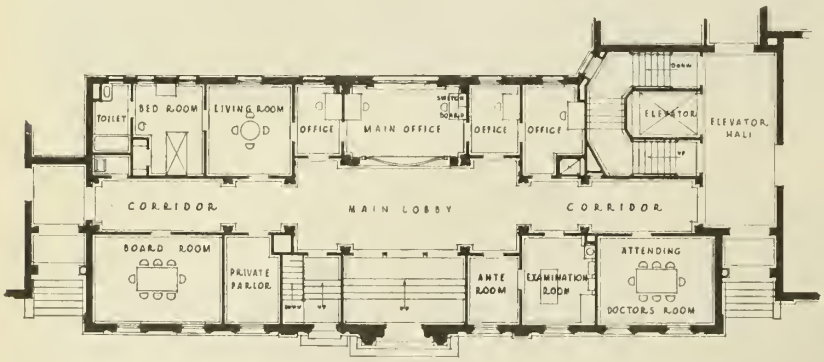

Fig. 5. Samaritan Hospital—Administration building. First floor plan.

The corridor which connects the patients' buildings extends from east to west, is entirely free and open on its south side, except at the points of intersection with the wards; the corridor may therefore be used in most of its length as a solarium. Along its northerly side are grouped various departments which directly serve the wards—namely, the kitchens, operating rooms, various examining and treatment rooms, and laboratories. For the more important of these a central position has been chosen. If additional buildings should ever be required for the accommodation of patients, the main corridor could be continued to the east, where, at a suitable distance from the female ward building, additional ward wings might be erected. By means of the main corridor, visitors, patients, and staff pass freely from one part of the hospital to another without disturbing the occupants of the several wings.

The entrance to the administration building, which is also the principal entrance to the hospital, is from a private road which runs at right angles to the boulevard and parallel to the margin of the public park, which is contiguous to the hospital property. This park is overlooked by the Van Schoonhoven building, the administration building, and the Thurman Memorial building, or nurses' home. Applicants for admission to the hospital (except ambulance patients) and visitors are here received. From the main lobby the vis-

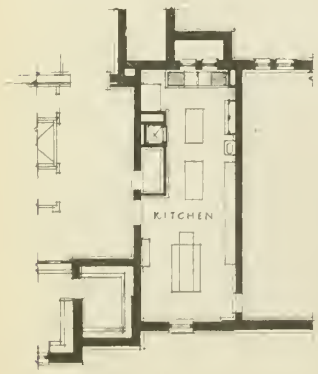

Fig. 6. Samaritan Hospital—Private ward building. Basement floor plan.

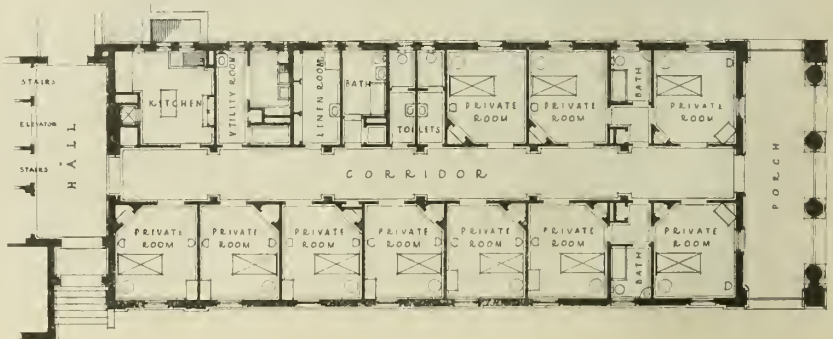

Fig. 7. Samaritan Hospital—Private ward building. First floor plan. Second floor similar.

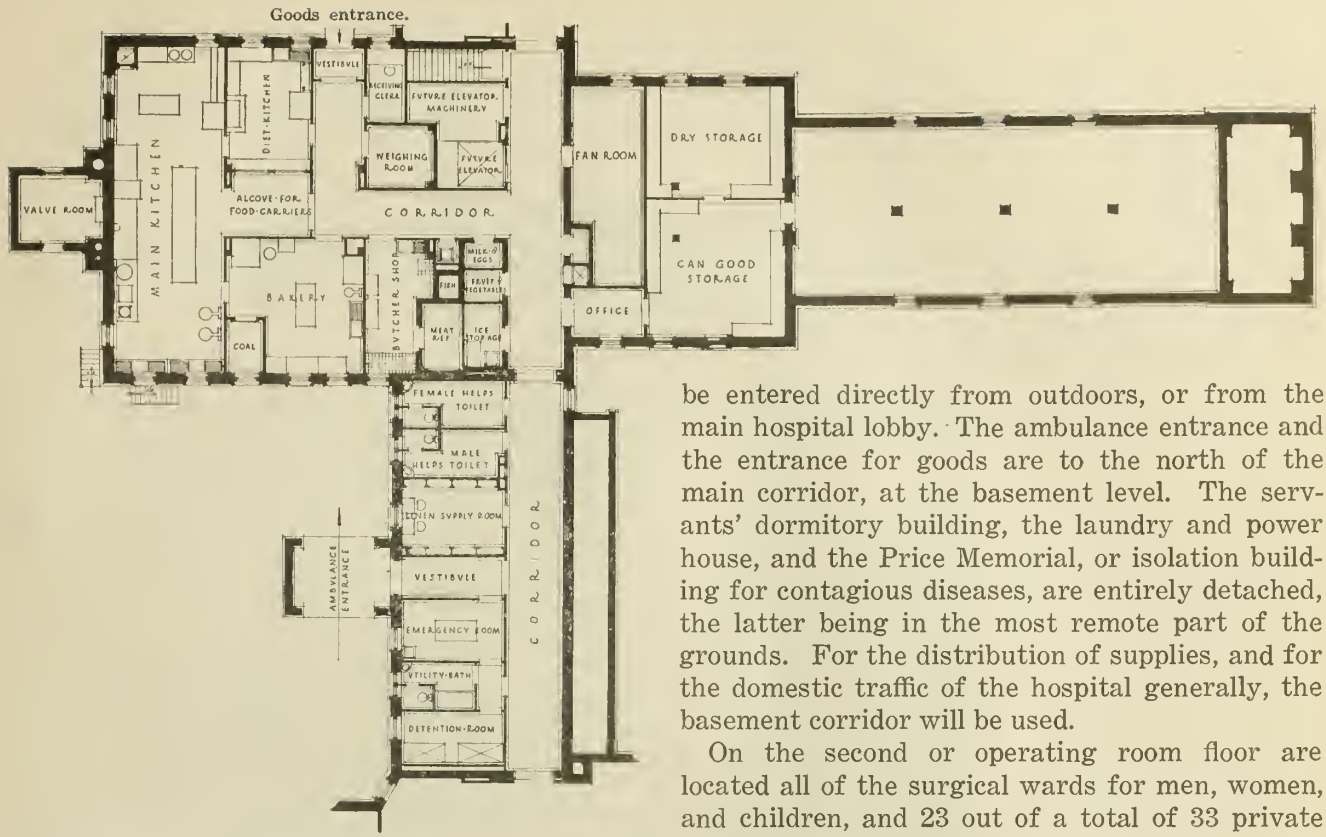

Fig. 8. Samaritan Hospital—Emergency, service, and male ward building. Basement floor plan.

itor proceeds to the left or north if his destination is the nurses' home, and to the right or south if his objective is the patients' department. The entrance for dispensary patients is directly beside the main entrance; the dispensary vestibule may be entered directly from outdoors, or from the main hospital lobby. The ambulance entrance and the entrance for goods are to the north of the main corridor, at the basement level. The servants' dormitory building, the laundry and power house, and the Price Memorial, or isolation building for contagious diseases, are entirely detached, the latter being in the most remote part of the grounds. For the distribution of supplies, and for the domestic traffic of the hospital generally, the basement corridor will be used.

On the second or operating room floor are located all of the surgical wards for men, women, and children, and 23 out of a total of 33 private rooms; thus the only surgical patients who will have to be carried in the elevator on their way to and from the operating rooms are those occupying rooms on the first floor of the Van Schoonhoven building—a very small percentage of the whole number.

We may now consider in somewhat greater de-

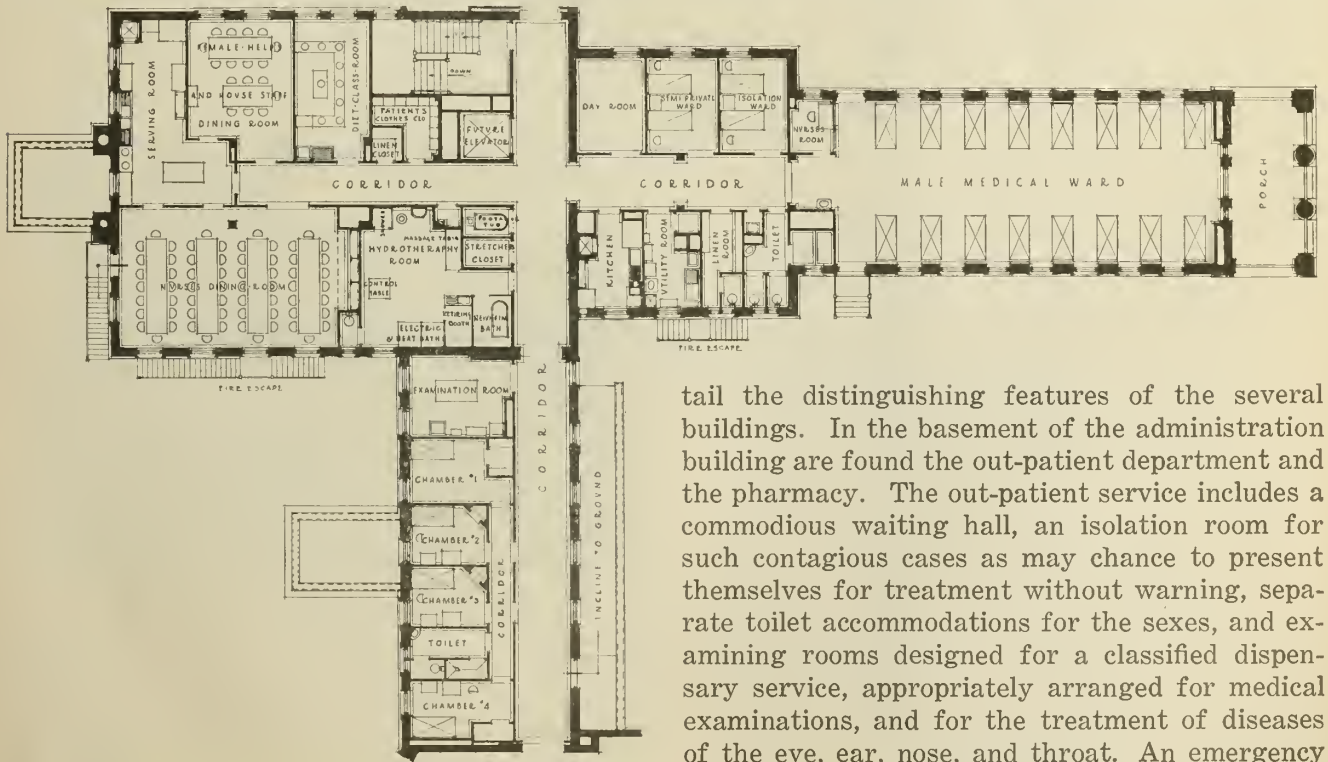

Fig. 9. Samaritan Hospital—House staff, service, and male ward building. First floor plan.

tail the distinguishing features of the several buildings. In the basement of the administration building are found the out-patient department and the pharmacy. The out-patient service includes a commodious waiting hall, an isolation room for such contagious cases as may chance to present themselves for treatment without warning, separate toilet accommodations for the sexes, and examining rooms designed for a classified dispensary service, appropriately arranged for medical examinations, and for the treatment of diseases of the eye, ear, nose, and throat. An emergency room for minor surgical operations is located else-

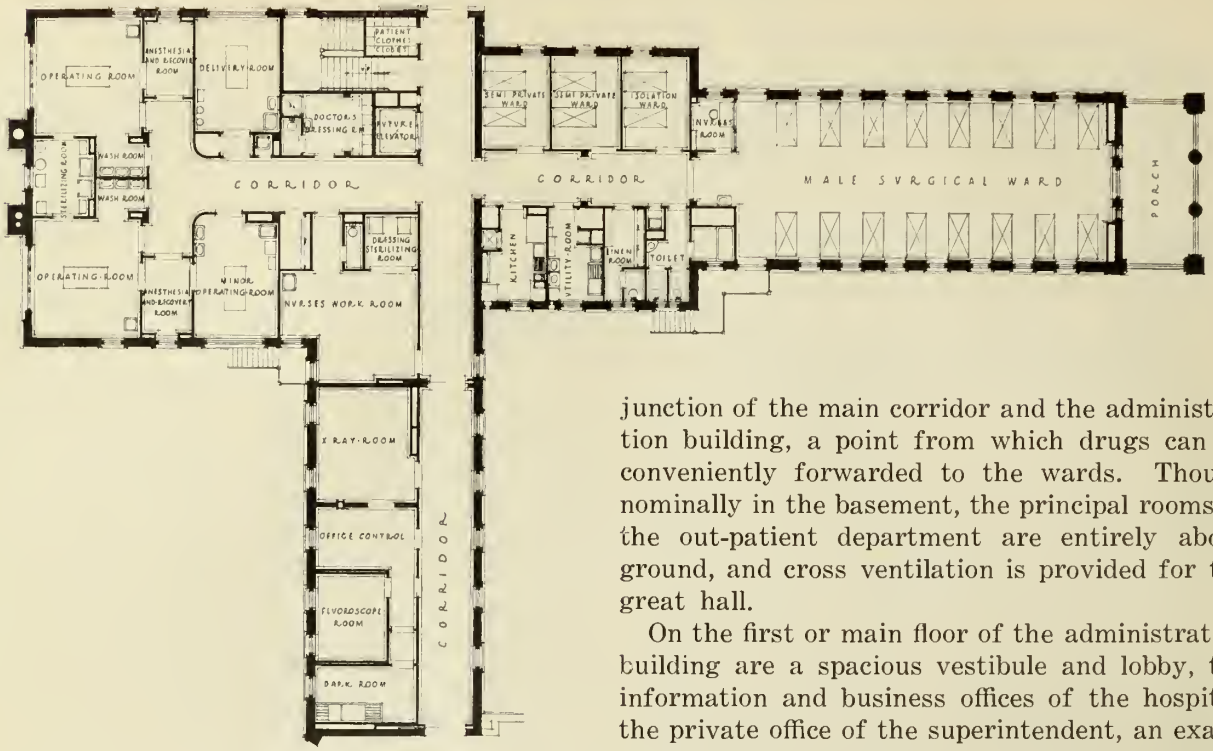

Fig. 10. Samaritan Hospital—Operating, service, and male ward building. Second floor plan.

where. A locker room is provided for the medical attendants. Adjoining the waiting hall is the dispensing room, connected with which are drug storage rooms, including a fireproof vault. The pharmacy is placed at the angle formed by the junction of the main corridor and the administration building, a point from which drugs can be conveniently forwarded to the wards. Though nominally in the basement, the principal rooms of the out-patient department are entirely above ground, and cross ventilation is provided for the great hall.

On the first or main floor of the administration building are a spacious vestibule and lobby, the information and business offices of the hospital, the private office of the superintendent, an examining room for applicants for admission, a cloak room for the visiting staff, a reception parlor for the friends of private patients, and the board room. Here also is the superintendent's suite, consisting of living room, bed room, and bath room. The second floor of the administration building is substantially a counterpart of the

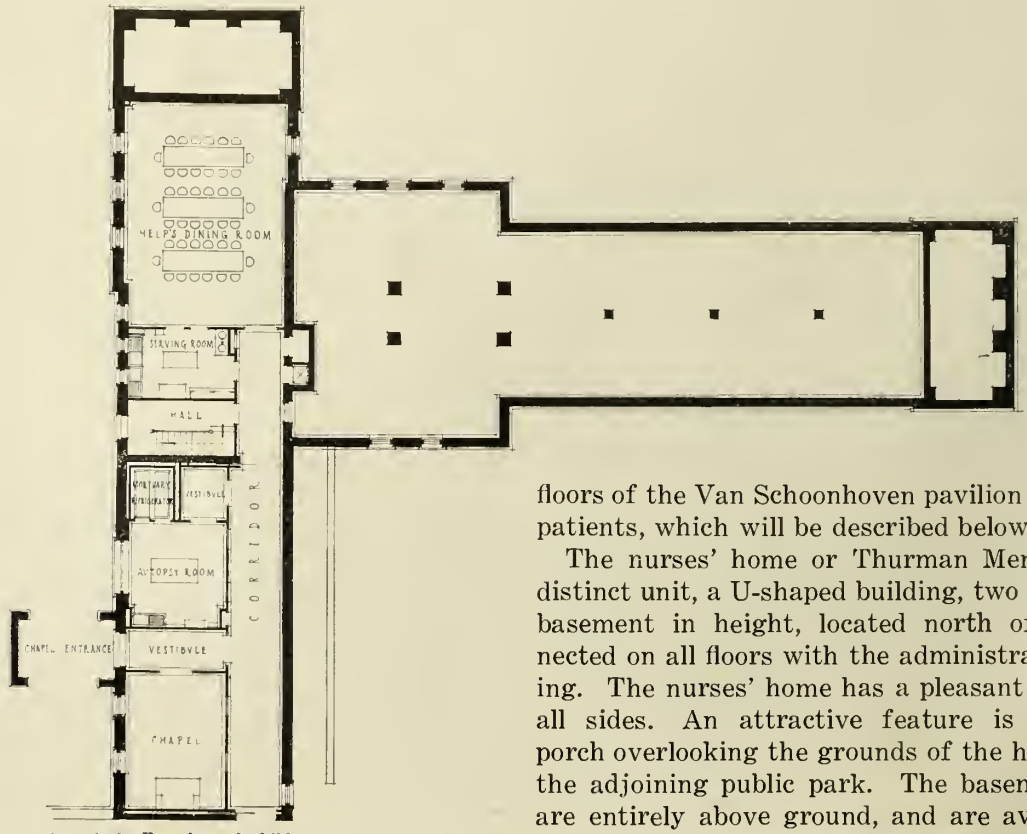

Fig. 11. Samaritan Hospital—Female and children's wards and laboratory building. Basement floor plan.

floors of the Van Schoonhoven pavilion for private patients, which will be described below.

The nurses' home or Thurman Memorial is a distinct unit, a U-shaped building, two stories and basement in height, located north of and connected on all floors with the administration building. The nurses' home has a pleasant outlook on all sides. An attractive feature is the broad porch overlooking the grounds of the hospital and the adjoining public park. The basement wings are entirely above ground, and are available for use for gymnasium and class room purposes. In

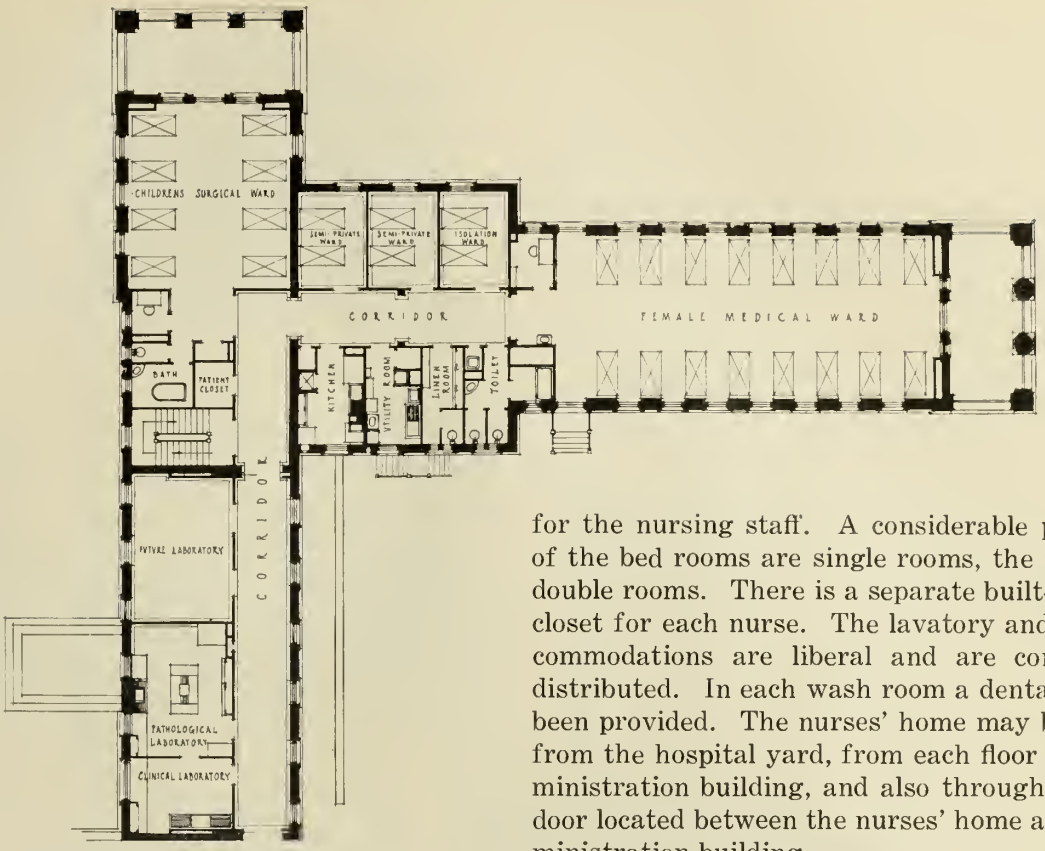

Fig. 12. Samaritan Hospital—Female and children's wards and laboratory building. First floor plan.

future they may be subdivided in whole or in part to provide additional sleeping rooms. In the main section of the basement are found a locker, dressing and rest room for nonresident nurses, a small kitchenette and hand laundry for the personal use of the nursing staff, a sewing room for the ladies' committee, and ample trunk and store rooms. On

Fig. 13. Samaritan Hospital—Contagious ward.

the first floor of the nurses' home are reception parlors and a spacious, well-lighted, and well-ventilated auditorium and lecture room. The remainder of this floor and the entire second floor are devoted to living and sleeping accommodations for the nursing staff. A considerable proportion of the bed rooms are single rooms, the remainder double rooms. There is a separate built-in clothes closet for each nurse. The lavatory and toilet accommodations are liberal and are conveniently distributed. In each wash room a dental sink has been provided. The nurses' home may be entered from the hospital yard, from each floor of the administration building, and also through a private door located between the nurses' home and the administration building.

The principal stairway and elevator have been placed in an inclosed shaft situated at the junction of the administration building and the main corridor. The elevator is at a point central to the private rooms on the second or upper floor, half of these rooms being in the administration building and the other half in the Van Schoonhoven pavilion.

The Van Schoonhoven pavilion is devoted entirely to the accommodation of private patients.

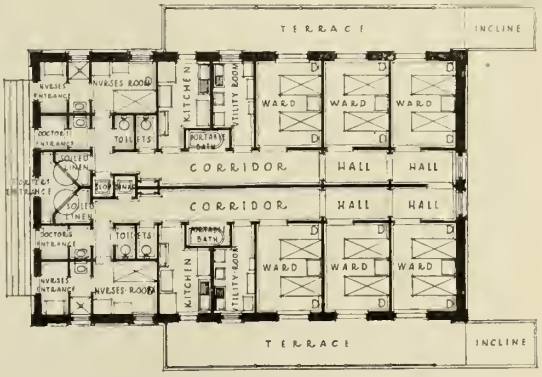

Fig. 14. Samaritan Hospital—Contagious ward building. First floor plan.

In the basement is a large serving room, where all private patients' trays will be prepared under the eye of the hospital dietitian. Dumb-waiter service connects this room with the serving rooms on the several floors. The first and second floors of the Van Schoonhoven building are identical in their

arrangement. On each floor there are 10 patients' rooms, each 12x14 feet, two private baths, a bath room for general use, water closets and lavatories for men and women, a broom and pail closet, a chart and supply room for the nurses, a clothes chute, a diet kitchen, with metal cupboards, and a large utility room, the equipment of which includes blanket warmer, drying closet, specimen closet, clinic sink, wash tub, bed-pan warmer, utensil sterilizer, solution shelves, instrument sterilizer, gas stove, and lavatory. On each floor, at the southerly extremity, is a broad porch.

Fig. 15. Samaritan Hospital—Nurses' home.

The ambulance entrance is on the main corridor, between the administration building and the kitchen wing. Close by are an emergency treatment room and a detention ward with private bath. Continuing along the main corridor from the administration building toward the wards, one finds a linen supply and distributing room, and locker rooms and lavatories for the nonresident help. The kitchen and its accessories come next. North of the main corridor on the basement floor are the main kitchen, with windows on three sides, the diet kitchen, bakery, cold storage for meats, fruits, vegetables, and dairy products, and the butcher shop. There is a separate entrance for receiving goods. Adjoining this entrance is the office of the receiving clerk and a room where goods may be examined, weighed, and temporarily stored; on the opposite side of the main corridor are the main grocery stores, occupying space beneath the head house of the male ward building. Adjoining the main corridor, between the male and female ward buildings, are the mortuary chapel, the funeral exit, and the autopsy room; and at the easterly extremity of the corridor, beneath the children's wards, are a serving room and large dining room for the domestics. Since the hospital yard is excavated at the level of the basement corridor, all of these rooms are entirely above ground.

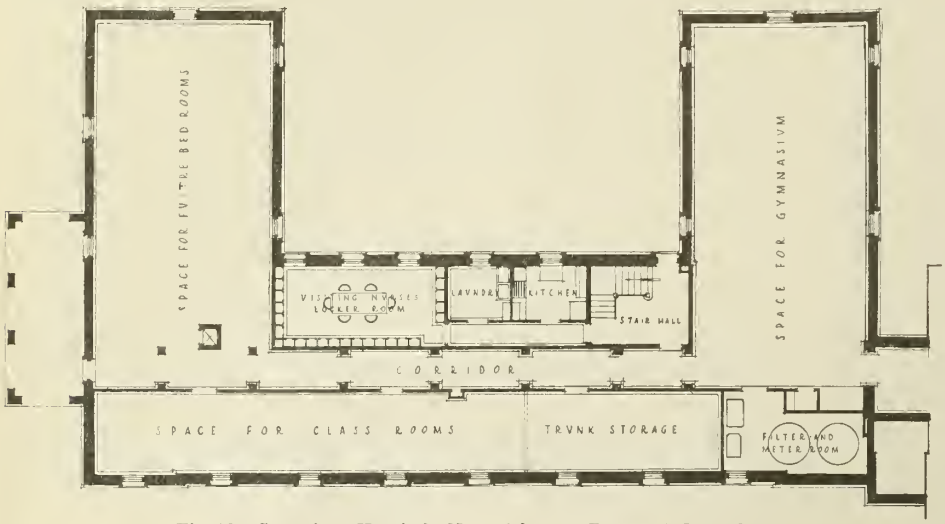

Fig. 16. Samaritan Hospital—Nurses' home. Basement floor plan.

On the first floor of the composite structure to the north of the main corridor are quarters for the house staff, consisting of four bed rooms, with shower bath, lavatory, and toilet, all connected by a private corridor; the hydrotherapeutic department; clinical, bacteriological, and pathological laboratories; and, directly above the kitchen, dining rooms and serving rooms for nurses, officers, and house staff, and the diet class room.

On the second floor of this structure are the

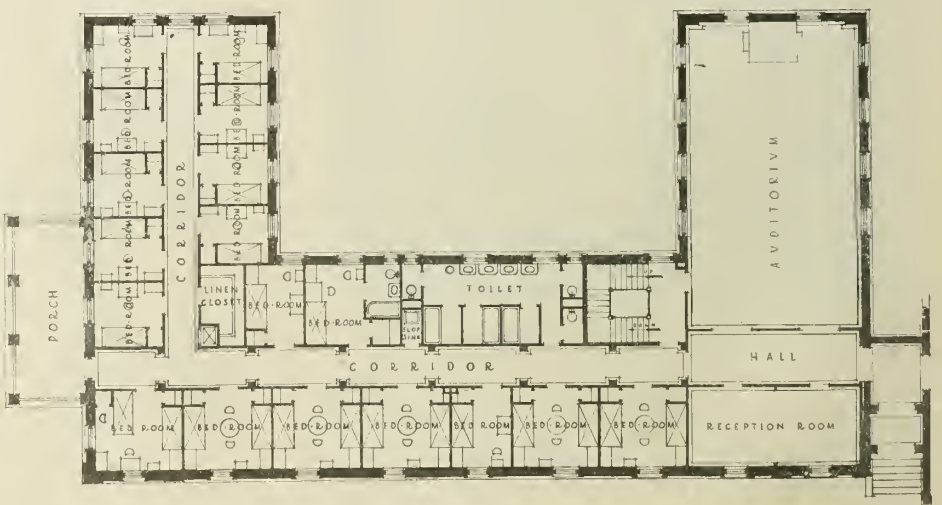

Fig. 17. Samaritan Hospital—Nurses' home. First floor plan.

x-ray department, including waiting room, treatment room, and dark room; large sun rooms, which may be used if desired as additional wards; and in the space directly above the kitchen and dining room is the surgical operating plant.

The main operating rooms, two in number, have ample north and top light; between them is a sterilizing room equipped for the sterilization of water, utensils, and instruments, and supplied with a steam-heated blanket warmer, so that patients may be warmly wrapped before they are

Fig. 18. Samaritan Hospital—Children's ward and help's dormitory.

taken from the operating room. There are two anesthesia rooms, a minor operating room, a delivery or labor room for maternity cases, a dressing room for the staff, and a large, well-lighted work room for the nurses, where surgical supplies will be prepared; in an alcove are two drum sterilizers for surgical dressings. In the kitchen and

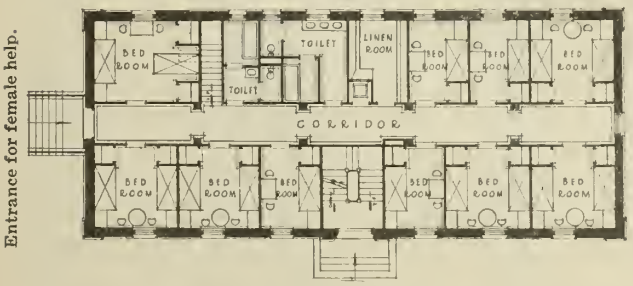

Fig. 19. Samaritan Hospital—Help's dormitory building. First floor plan.

operating room wing is a stairway which extends from basement to roof, and adjoining this stairway space has been reserved for a second elevator. Perfect ventilation is assured between the ward wings by the open corridor which connects them. Gently inclined ramps lead from this corridor to the lawn.

The male and female ward units are identical. In the ward proper are found 16 beds, with a window for each bed; the hopper transom over the double-hung sash extends to the ceiling. At the lower end of each ward is a broad porch. At the head of the ward is glass-inclosed office and chart room for the nurse. In the head house or expanded section of each ward, contiguous to the main or connecting corridor, are found on one side of the 8-foot ward corridor two separation rooms and a day and dining room for convalescent patients; and on the opposite side bath room, lavatory, and toilets for patients, all with direct ventilation; linen room; nurses' toilet room; a utility room, the equipment of which is identical with the equipment of the utility rooms in the Van Schoonhoven building, which has been described above; pail and broom closet; clothes chute; and ward kitchen, with brine-cooled refrigerator, with sanitary tops, tray table, sink, ventilated garbage closet, ventilated dish-rag dryer, and portable metal cupboard with sanitary top.

The separation rooms in the ward wings, as well as the private rooms in the Van Schoonhoven and administration buildings, are supplied with silent electric calls. A synchronous electric clock system has stations in the wards and wherever else it is required. All parts of the hospital are connected by a private or interior telephone system, operated through a switchboard in the main office; and there is also an exterior system for each building.

The two children's wards, with 8 beds in each, have their own spacious porches, baths, and toilets, but, for the sake of economy, share with the adjacent female wards the use of ward kitchen and utility rooms. The children's wards as well as the main wards are exposed on three sides. The children's wards have their own small toilets and babies' bath.

Portable bath-tub closets are located off the main corridor, accessible to the wards, and each ward has its locker closet for patients' clothes.

The Price Memorial for contagious diseases is of unique design. It comprises two complete units, each with dressing, bath, and bed room for nurses; robing and wash-up room for doctors; kitchen; utility room; portable tub closet; separate toilets for patients and nurses; broom and pail closet with sink; and linen sterilizer. All of the service rooms as well as the patients' rooms have two entrances—one from the terrace and one from the interior corridor. The service rooms are arranged in duplicate at the north end of the building. The patients' rooms or wards occupying the southerly half of the structure face east and west, respectively, and are separated by a double corridor, the sections of which may be connected or disconnected at will. There are six small wards in all, three facing west and three facing east. Each ward is large enough to hold 2 beds. The arrangement of the wards or patients' rooms is such that, according to demand, from one to five rooms may be grouped together in a single series

or working unit. The capacity of the building may be increased by the addition of patients' rooms at the southerly end of the building without in any way interfering with the continuous use of the original structure. The equipment is ample for a larger service if the city should require such a service.

Separate sterilizers are provided in the contagious building for soiled linens, dishes, bed utensils, and instruments; and soiled linens and contaminated food containers will be sterilized before they are sent to the laundry and kitchen, respectively. The building and its equipment are so planned that no one need enter it except those

Fig. 20. Samaritan Hospital—Power house.

who are engaged in the actual care of patients. Supplies intended for the kitchen are passed through a Dutch door; soiled linens are removed by a porter from the built-in sterilizer, one side of which is accessible to the nurse working in the ward, while the other side is accessible from an outer room to the porter who carries the linens to the laundry.

The laundry is unusually spacious, well lighted, and ventilated. It is amply equipped for the present needs of the hospital, and the available floor space is sufficient to house additional machinery if required. The laundry machinery is of standard pattern, and was selected by a committee of Troy experts.

At one end of the laundry building, in a separate compartment, is placed the sterilizer for mattresses and for the clothing of patients admitted to the contagious wards. The sterilizer is built into the wall between two separate rooms, one designed for the reception of infected articles and the other for the storage of articles after sterilization. At this end of the building is a small room which can be entered only from outside, and which is to be used when required as a contagious morgue. The garage, which is planned as an extension of the laundry building, accommodates three vehicles. The pump and generator rooms are in the basement, directly beneath the laundry, and connect with the adjoining refrigerator plant, boiler room, coal bunker, and garbage incinerator. A commodious pipe tunnel extends from the power plant to the main buildings.

In an isolated dormitory building accommodations have been provided for all classes of resident employees, except doctors and nurses. The dormitory building is one of the distinctive features of the hospital. It has separate entrances for male and female employees. The proportion of space allotted to the two sexes may be changed at will. The location of this building is such that its occupants can enjoy their quarters unre-

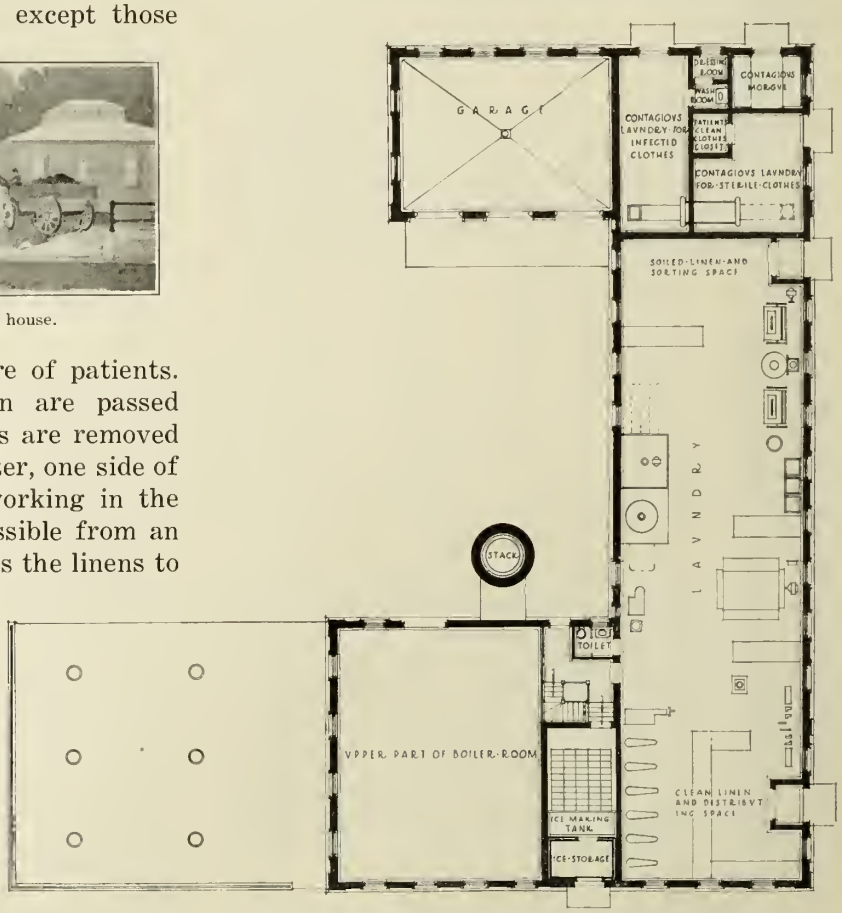

Fig. 21. Samaritan Hospital—Power house. First floor plan.

strainedly without risk of annoying hospital patients. The subdivision of dormitory space into small rooms will doubtless be appreciated by the employees, and should favor the continued employment of high-grade domestic workers.

A sanatorium for Indians afflicted with tuberculosis is now in full operation in Iowa, according to the Estherville (Ia.) *Republican*. It was formerly the agency school for the Musquakie Indians in Tama county, but the old Indians refused to permit their children to attend the school, and the Government confessed its inability to make the school a success. Then it was converted into a tuberculosis sanatorium, and recently was opened for that purpose, in charge of Dr. Russell as superintendent. At present there are 50 patients, which are about as many as can be accommodated, but the facilities are being enlarged. The patients are mostly children.

THE HOSPITAL X-RAY LABORATORY—ITS PLACE IN THE HOSPITAL.[1]

Scope and Equipment Depend on Many Things Which Must Be Considered—Good Equipment Without Trained Director Curtails Its Usefulness—Some Details.

By I. SETH HIRSCH, M. D.,

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THE many questions which are constantly arising regarding the organization, apparatus, methods, and routine of the roentgen-ray department in hospitals have prompted this description in the hope that the suggestions here given, based on extensive experience, may be of aid.

It is clearly appreciated that the system and methods outlined are not perfect. Though certain definite standards have already been generally adopted, it nevertheless must be borne in mind that there are still many mooted questions and changing conditions requiring constant realignments. A measure of credit is, however, claimed for the ideas and system outlined in that they are practical, born of experience, and that they have met in a satisfactory manner the requirements of large, active and exacting services.

ROLE OF THE LABORATORY.

The application of the roentgen rays as a diagnostic agent in every field of medicine and surgery has made the x-ray department important and indispensable in a hospital organization.

Though it is acknowledged, and would be more generally conceded if the roentgenologist were always frank, that the art of the roentgen diagnosis has not yet reached its highest and fullest development. It cannot, on the other hand, be denied that it has made tremendous strides and conquered many fields, helping and benefiting the surgeon and physician in numerous ways, and will undoubtedly, as time goes on, demonstrate to him greater benefits.

It might seem that at this late day it would be unnecessary to argue for the value of the roentgen-ray laboratory as a diagnostic agency, but the state of this department in many American hospitals seems to indicate a rather tardy recognition of the service it can render in medicine and surgery, and the responsibility for this cannot be placed entirely on the management, for how can the lay officers be expected to appreciate the value of a well-organized department to the clinical service when medical men have apparently little exact knowledge of its field of usefulness?

One of the striking things in the hospitals abroad is not always the elaborate and ornate, but the useful and active department, playing an important role in the clinical activities of the hospital.

A well-organized and equipped x-ray laboratory becomes the repository of a vast amount of interesting material, to the study of which it is asked to give its contribution. It becomes, so to speak, the clearing house for the undiagnosed and difficult and interesting cases in the hospital, and, rationally applied, it benefits the hospital generally by permitting a more rapid diagnosis, indicating a more rational therapy, and resulting in the end in shortening the stay of the patient in the hospital.

The roentgen laboratory is essentially a clinical laboratory because it deals with patients, and it is therefore necessary that such a laboratory should be a distinct adjunct and closely associated with the hospital wards.

MAINTENANCE.

The maintenance of an efficient roentgen department is an expensive item in hospital economies, and there is apparently no limit to the expenditure which may be made for apparatus and equipment. The apparatus, appliances, and even the actual maintenance are far more costly than for a pathological laboratory.

The contention that it is possible to maintain an efficient department according to modern standards at a moderate cost cannot be disputed. There are certain absolute essentials without which no department can do efficient work, and it is an investment making for eventual economy to obtain the most efficient, essential apparatus at the beginning. In addition to these, there are a multitude of accessory appliances which are to be considered luxuries; yet the question of just how much equipment a hospital is to purchase is a difficult one to decide, because of the overenthusiasm of the mechanically untried worker on the one hand, allured by new and glittering devices, and the uninterested, uninstructed lay official on the other, with the result that there is an appalling wastefulness in the management of some laboratories, useful apparatus being frequently discarded for new-fangled ideas. Would that it were possible for a roentgen department in a hospital to have a multitude of appliances, extensive floor space, and abundant assistance, but all hospitals are not richly endowed, and it appears to be diffi-

[1]This is the first of three papers on The Hospital X-ray Laboratory, by Dr. Hirsch. Second installment next month.

cult to convince the authorities that the roentgen department is the most important part of a hospital organization—which it is not. Certain limitations will be met with in the largest and richest institutions, and it is not to be forgotten that doing the necessary work efficiently, in spite of certain limitations, shows the master.

ORGANIZATION.

In the organization of a department it should be borne in mind that an important thing, after all, is the diagnosis or the reading of the plate—in other words, that the object for which the laboratory exists is to report the results of the examination, and that the making of the plate is only the means to an end, and that it is more important to make the plate radiographically useful than photographically perfect, and that these are not always synonymous. To equip a laboratory, and then fail to provide it with a competent director particularly interested in the work, is a futile effort in the right direction.

In the organization of a department it is important to consider—

1. The size of the service.
2. The variety of the service.
3. Financial condition of the hospital.
4. Money available.

The organization of a department of a hospital of 100 beds would differ in many respects from that of a hospital of 1,000 beds. So, also, a laboratory for the complete service of eye, ear, nose, and throat would in many respects be differently assembled from a laboratory for medical and surgical service.

What should be required of a department is—

1. That the results of the examination should in a usual case be available within twenty-four hours.
2. That a complete record, consisting of report of the finding and a diagram or print of the plate, should be appended to the history.
3. That the plates should be so filed as to be quickly isolated, and so classified as to be readily available for systematic study.

These problems should be solved in an economical manner as regards labor, time, and money.

To have a laboratory of the highest efficiency and greatest utility there is necessary in its organization:

1. Efficient direction.
2. Sufficient apparatus and equipment.
3. Sufficient room.
4. Efficient assistance.

To buy costly apparatus, and permit the work to be performed by the untrained and under the haphazard direction of a medical staff, leads to eventual dissatisfaction and discredit.

ROUTINE.

The routine, with few modifications, might well be applied to any service or any laboratory.

BELLEVUE HOSPITAL—RADIOGRAPHIC DEPARTMENT.

Name.....
Age.....Ward.....O. P. D.....
Resident physician.....
Attending.....
Superintendent.....
Date.....

Clinical diagnosis.....
Part.....

Plate No.....
Part, position.....
Tube.....
Exposure, milliamp.....

X-ray diagnosis.....

Fig. 1. Requisition card for x-ray examination—Size, 4x6 inches. Data above the first black line is filled in by the medical staff. Data between the first and second black lines is filled in while the examination is made. The x-ray diagnosis is filled in after the plate has been read.

Requisition cards for x-ray examinations (Fig. 1), bearing the signature of the attending physician or surgeon and the superintendent of the hospital, are submitted to the department in the morning if examinations are to be made on that day. This refers to a busy laboratory only, where it becomes necessary to plan the work, and where the actual plate examination work must be finished at a certain hour. The signature of the attending physician is necessary in order to hold in check the enthusiasm of an interested house staff for the roentgen demonstration of conditions where no difficult problem exists in diagnosis. The signature of the superintendent is important in order that he may thus keep in touch with the amount of work the department is doing.

The patient may be brought to the department by a nurse or orderly from a ward, or by a special orderly attached to the x-ray department. The latter method is the best in large hospitals, for considerable time is saved by the nurses of the wards, and it becomes also unnecessary for them to wait in the department until the examination is finished. Examinations are made, if possible, during the morning hours, the afternoon being devoted to fluoroscopy and to developing, recording, and study of plates.

A report of the radiographic findings should be dictated to the stenographer the following day. The plates, labeled, should then be placed on illuminating boxes for the purpose of observation by the staff.

BELLEVUE HOSPITAL—DEPARTMENT OF RADIOLOGY.

Disease.....

Name	Plate No.	Remarks

Fig. 2. Diagnosis card—Size, 4x6 inches.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL—DEPARTMENT OF RADIOLOGY.

Date

Division	Child	S	M	Gyn.	GU.	Clinic	O. P.	Pay	Free	Amt.	Series No.	Total
No. of patients												
No. of plates												

Tubes	Exp's	Diseases	No.	Notes
		Circulat. syst.		
		Respir. syst.		
		Gastro. int. syst.		
		Urinary syst.		
		Pregnancy		
		Joints		
		Bones		
		Fractures		
		Dislocations		
		Foreign bodies		
		Treatments		

Fig. 3. Daily record card—Size, 4x6 inches. Gives summary of day's work, including number of exposures made with each tube.

Two copies of each report are made, one being filed in the department and one being distributed to the wards, to be filed with the ward histories. These duplicate reports filed in the department may be appended to the plates as they are laid out for inspection, and thus save the director the necessity of personally explaining each plate to those calling at the department. In addition to this, prints which best illustrate the results of the examinations are filed with the history chart, either in all cases or where requested. The original requisition cards are filed in alphabetical order according to the name of the patient.

A diagnostic card system should also be kept which classifies the radiographs according to the pathological conditions (Fig. 2). The plates are filed in numerical order in large filing cabinets by the aid of filing guides, and this is done either daily or weekly. When done weekly, the daily plates are placed according to the name of the patient into lettered compartments placed under the illuminating boxes.

For the rapid isolation of a plate, a day book is kept, wherein is recorded the data of the requisition card; the x-ray diagnosis, etc., being entered the following day. A daily report card (Fig. 3) is sent to the superintendent, giving the number of patients from each service, the number of free and the number of pay patients, etc. This is returned to the department and filed under the date, and is useful at the end of the year in the production of the annual report.

When plates are taken from the department, they are signed for. When given to the dark room for printing or reducing, etc., the plate is replaced in the file by a red card. By this method it is possible to determine where any particular plate is, and to locate it when inspection is desired.

[To be continued.]

FEEDING THE HOSPITAL—THE FOOD.[1]

Eggs, Poultry, Meat, Fish, and Oysters—Their Food Value—Their Selection, Preparation, and Cooking—Their Peculiar Values in Feeding the Sick.

.By MISS LULU GRAVES, Dietitian Lakeside Hospital, Cleveland.

PAPER V.

IT has been said that eggs are as indispensable in cooking as the word "the" is in conversation. This may be attributed to the fact that they contain high nutritive value, are easily digested, very well absorbed, and have a mild flavor which makes it possible to combine them with a great variety of other food materials.

Their value as a food depends a great deal on their freshness and the manner in which they are cooked. Perfectly fresh eggs are liked by almost everyone, but, if kept at ordinary room temperature, the flavor soon deteriorates. As the shells are porous, they may be quickly contaminated; they should not be kept near anything which has a strong or disagreeable odor, nor should they be packed in any material which has a disagreeable odor.

Eggs kept for any length of time in a warm room will have alkaline substances produced, presumably from the white; phosphoric acid from the yolk acts on these substances, forming sulphuretted hydrogen, which gives the characteristic odor to spoiled eggs. If air does not reach the inside, this chemical action takes place more slowly. Many devices are used to prevent the loss of water by evaporation and the passing of air into the egg. Coating the outside of the shell with vaseline is probably the most effective means, but it is likewise the most expensive and requires too much time to be practical. Eggs may be preserved in a solution of lime water or in salt water, but these penetrate the shell and after a time affect the taste of the egg. Sodium silicate (water glass) has proved to be very satisfactory in preserving eggs. By this means eggs may be kept several months with very little, if any, change in the flavor. The yolk retains its normal position, and the eggs are more nearly like fresh ones than if preserved in any other of the ordinary ways. The shells crack very easily, so they must be handled carefully, and they must be used very soon after being removed from the solution.

Storage at a temperature of 32°-34° F. in a clean, pure atmosphere will arrest bacterial development in eggs, and there will be comparatively little change in four or five months, though after that the change is more or less pronounced, according to method and length of time kept. If not turned frequently, the yolk adheres to one side. The amount of moisture in the cold storage chamber is important, as the evaporation must be kept low. These eggs, too, should not be allowed to stand for any length of time in a higher

[1]This is the fifth in a series of papers on "Feeding the Hospital." Last month, "Vegetables, Cereals, and Fruits." Next month, "The People to Be Fed."

temperature after being removed from cold storage.

Like all foods high in protein content, eggs should be cooked at a low temperature in order to prevent toughening the albumen. Water should not be allowed to boil while the egg is in it, whether the egg is being cooked in the shell or out of it (poached).

The length of time for cooking depends on the amount of heat used, number of eggs being cooked, whether the eggs are very cold when placed in the water, the size and freshness of the egg, the size of the pan and the material of which it is made, and the amount of water used. The idea that an egg should boil three minutes is not logical, and is not worthy of as much faith as is shown in it. Practically no two households will be found where the above-mentioned conditions are identical or even similar; it would be impossible to obtain uniform results when the only uniform condition is the time. Fried eggs are generally considered hard to digest; they are if they are fried at a temperature high enough to toughen the protein, or to separate the fat used into fatty acids. As butter is the favorite fat for frying eggs and its "cracking point" is low, these irritating acids are pretty apt to be formed. The smoking of the fat means that the acids are present, and many people wait for this "sign that the fat is hot enough for use" before dropping the eggs into it. The coating of fat may be difficult for the digestive juices to penetrate, thus causing trouble for a weak digestion.

Soft-cooked eggs are the most readily digested, though hard-cooked eggs are as completely digested and assimilated, the difference being in the length of time required, provided the hard-cooked have been well masticated. Raw eggs are not so easily digested as slightly cooked ones, as their fluidity causes little secretion of saliva, and they are apt to be coagulated in the stomach.

Eggs are a concentrated form of food, and during the greater part of the year might be classed as inexpensive. At 35 cents, or more, per dozen, they cannot be used freely in a family of limited means; but in combination with a white sauce they may be served as an omelet; or hard boiled and chopped or sliced, with a white sauce, they make a very good substitute for meat in the diet and require less fuel for cooking.

Instead of the white sauce, the cost may be farther reduced if bread crumbs and milk are used, and still very palatable and nutritious combinations made. Grated cheese and pieces of meat not usable by themselves may be added to form a substantial dish. When one does not need to restrict the number used, most appetizing souffles and desserts are a pleasing change from puddings and pies. Because of their ease of digestion and the completeness of their absorption, they are desirable for people with impaired or weak digestion.

Other advantages of eggs as a food are that they contain no injurious substances, such as they be found in other forms of animal protein, and the albumin does not increase sugar in diabetes as some albumins do.

There is a tendency on the part of the public to be suspicious of hospital eggs. Whether there is any justification for this suspicion, there certainly is no need for it. Even if the financial situation will not permit the buying of strictly fresh eggs, a candling apparatus may be devised with practically no expense and very little time and trouble. Not a great deal of time is required to candle a case of eggs, and the trouble is far more than counterbalanced by the satisfaction of knowing that the patients and others are being served only good eggs. It is a most deplorable thing for a sick person (or well person either, for that matter) to attempt to eat an egg that causes nausea and perhaps a dislike for eggs the rest of his life; and, incidentally, it is most humiliating for a dietitian to be told that such a thing has occurred in her domain. One or two experiences of that sort are responsible for this determination on my part never to serve eggs which are at all questionable, if it can possibly be avoided.

At Oak Forest the chief engineer made for me a tin tube, fitted to a standard, with holes cut into it for the eggs and an extension above for the light. It was very efficient, as well as a good-looking piece of apparatus, and cost but a few cents. We used it in a small store room which had no window. Is there a hospital in the country without one or more such rooms? We provided air by leaving the door open and hanging in the opening a black curtain. It worked very well, and we could grade the eggs as closely as we chose.

At Lakeside we are using a tin box with holes cut into it. The electric bulb is inserted and the cover of the box closed tightly enough to shut out all light. While our facilities here are not so good for close grading as in the other instance, we can at least determine by spots and air space which we do not want for eating purposes, and thereby protect our patients and nurses from the unpleasantness of being served a stale egg.

POULTRY

furnishes another food material which is much used in the hospital dietary. All domestic fowls are similar so far as food value is concerned.

Conditions which influence the flavor and quality of poultry as food are age and sex, food and care, killing and plucking. Almost any breed may be made acceptable for eating with the proper care and food, though the larger fowls are considered better than the smaller. The young fowl is more tender and delicately flavored than one which is older; more growth and exercise have made the fibers of the older fowl tougher, but more extractives have developed, which gives a stronger flavor. The flesh of young fowls which have been well fed and cared for is more desirable than that from a neglected fowl, the flesh of which will be tough and stringy. The more exercise a fowl gets the more extractives are developed, and hence the more decided flavor. This is why the flavor of wild game is so pronounced. Capons and milk-fed chickens grow to be larger than the common fowls, and their flesh is whiter and more delicately flavored. They are usually confined in a small area, and so much care is given to them to make their flesh of the highest quality that they bring a much higher price on the market.

In buying poultry, one looks for the following points for good quality: (1) a well-rounded form, with no bony angles, particularly on the breast; (2) a clear skin, free from yellow blotches—these blotches are indications of long storage; and other indications of long storage are a leathery skin and soft muscles, easily torn; (3) in a young fowl the breast bone is still cartilage, being soft and flexible, the feet are soft and smooth—not hard and rough; in ducks and geese the windpipe is flexible in a young fowl; in squabs the flesh is whitish and the feet red, in the older bird the flesh is purplish.

The Yearbook issued by the Agricultural Department says that, so long as poultry is frozen solidly, no harm is done by storage. At the meeting of the packers and cold storage men in Chicago last year, meats and poultry were served that had been in storage for a much longer time than we like to think of them as being kept, and defied anyone to find fault with their flavors. No doubt much of the criticism of cold storage is due to the manner of thawing and handling after the poultry is removed from storage. The practice of thawing by dipping the fowls in tanks of water has been most repulsive in some instances where the water in the tank has not been renewed as frequently as it should be, and poultry which was in good condition when taken out of storage would be pretty well contaminated after coming out of the tank. It is difficult for the dealer to sell frozen chickens to retail buyers, as few realize that the frozen fowl may be really safer than one which has been thawed, and the fact that it is not frozen is no indication that it has not been in storage. After being taken from the extremely low temperature into the higher one in the market, they deteriorate very rapidly.

Ducks and geese have so much fat that they are very little used in the hospital dietary. Squabs and quails, etc., can be used only in hospitals whose patrons are well to do, but chicken is used daily for all classes of patients and in all hospitals.

The difference in food value of dark and light meat is a negligible quantity. There is a lesser amount of fat in the light meat, but there is not enough in the dark meat to be given any consideration dietetically. The dark meat has more extractives, and consequently is more highly flavored. There was formerly a prejudice in favor of using white meat for a patient when he was beginning to eat his first solid food, and forbidding the dark; but that no longer prevails among the well informed.

Cooking plays as important a part in the desirability and digestibility of chicken as any other factor. What may be said of the cooking of chicken may be said of all meat. If any microorganisms are present, they are killed by the cooking process; flavors are developed which completely alter taste; chemical changes take place which produce acids that soften the fibers and make the flesh more easily digested. Cooking meat too long, or at too high a temperature, will dry up the juices, making it tasteless, and toughen the fibers so that they are not readily broken down by the digestive juices.

MEATS.

If meat is used as a food material itself, it should be submitted to a high temperature at first in order to sear the outer surface and retain the juices, and then the temperature should be lowered for the rest of the cooking. We sacrifice the outer crust for the sake of improving the remainder. If both meat and broth are to be used, as in stews and fricassee, a slow cooking is required at a low temperature in a well-covered kettle. In this way a very acceptable food may be obtained from a tough piece of meat. If only the broth is to be used, the meat should be cut in small pieces in order to expose the largest possible surface; it should be put in cold water and allowed to stand a half hour in order to dissolve out the proteins which are soluble in cold water; then cooked slowly in a tightly covered vessel in order to retain all the flavor. Not less than an hour, and more if possible, should be allowed for a quart of broth to cook, never boiling at any time. By this process all the soluble proteins, extractives, and mineral salts are in the broth. It should be poured off the meat, but not strained,

as the flocculent particles are the protein, and should be given unless the patient is in such an extreme condition that even these minute bits of solid matter disturb him.

For young and tender meats, broiling and roasting give the best results; older and tougher fibers are much more difficult to make palatable in this way; stewing, boiling, en casserole, etc., are more satisfactory ways of serving them. In roasting and broiling, no fat should be allowed to accumulate in the pan, as it will coat the outer surface of the meat and be difficult for the digestive juices to penetrate it and the hardened crust made by the high temperature.

All meats have much the same composition, that from different animals varying chiefly in proportion. Lean meat is made up of bundles of fibers held together by connective tissue, with varying quantities of fat scattered through and between the membranes. There are many forms of protein in meat—albumin in the blood and muscle; collagen, which becomes gelatin when cooked, in the skin, connective tissue, tendons, and bone; fibrin, a substance in the blood which causes it to coagulate and form a clot when exposed to air; myosin in the muscles and tendons, which causes the stiffening of muscles after death, known as rigor mortis; globulin in the blood, and many others. As some of these are soluble in cold water and some in hot water, the manner of cooking figures largely in the results we get when it is ready to be eaten.

After an animal is slaughtered, the meat passes through three stages. In the first of these, immediately after death, the meat is usable; in the second, rigor mortis has taken place and it is not good for food; in the third stage acids have developed which soften the muscle fibers and it is again fit for food. This is known as the "ripening" process. When we rub vinegar or other acid on meat which is tough in order to soften the fibers and make it more tender, we are simply carrying on this natural process.

Our most expensive cuts of meat are from the parts of the animal which are least used. They are the more tender and fine grained parts, but they have less juice and extractives. The tenderloin and porterhouse steaks are cut from the portion where there is little or no exercise of the muscle, while the round and the flank steaks are from the leg or just in front of it, where the muscle is much exercised. The latter are just as nutritious and more highly flavored, and, with proper cooking, they may be made very palatable. Owing to the prevalent American habit, or cultivated taste, which demands delicate flavors, the first mentioned are much higher priced.

Beef should be fine grained, well mottled with fat; the lean should be bright red, the fat firm, yellowish, and should crumble easily. Beef has no very pronounced flavor, and consequently it palls on the appetite less than pork or lamb. Veal has less fat and is less nutritious than beef. It has more gelatine. Veal broth is considered next to chicken in delicacy. Veal should be thoroughly cooked, while beef is more desirable for most people if rare. There are some contentions to the effect that veal is hard to digest, but if thoroughly cooked and *properly masticated*, there is nothing about veal to give any trouble in digestion. Dr. Lorand, of Carlsbad, uses veal and chicken in the same way in diets for delicate people, and gives veal preference over beef as a food. Either veal or chicken finely chopped may be given in cases of gastrointestinal trouble.

Lamb is less easily digested on account of the greater amount of fat and its higher melting point. It has a strong flavor. If the outside skin comes off easily, the mutton is good. Mutton should be of a pinkish color, the fat hard and flaky. In lamb chops the bone is red; in mutton chops it is not. Lamb must be well cooked; mutton may not necessarily be.

Owing to its high percentage of fat, fresh pork is hard to digest, but, if cured or smoked, it is not. It must be very thoroughly cooked because of the possible presence of trichina. Trichina will withstand the action of heat and smoke if applied only in moderation, and it may be transmitted to the human being through the eating of meat. We hear pork spoken of as an unclean food because of the unclean habits of the hog; but the gastric juice of the hog is exceptionally efficacious and will transform anything the animal eats. The fat of bacon is in granular form and is easy of digestion. Ham is not difficult of digestion, but it forms uric acid in considerably large quantities. Ham and bacon are sugar-cured and smoked; this gives them a good flavor and makes them keep well.

Liver has much albumin and carbohydrate in comparison with other meats. It also contains lecithin. It is valuable in a diet requiring high iron content.

Sweetbreads appear prenatally in the calf, and soon disappear after the calf quits living on milk. The thymus, or throat sweetbread, and the heart, or pancreas sweetbread, form a pair. The heart is the round thick part, and is esteemed as the more delicate. They are extremely easy of digestion, but contain large percentage of nucleoprotein, a form of protein which is richer than other forms, and harmful in cases of gout and

rheumatism. They may be served in many ways, but they are expensive, and spoil easily.

For those who desire the nourishment of meat, and yet are not equal to caring for it in the ordinary way, the pulp may be separated from the fiber by scraping a thick piece of beef with a dull edge of a knife or spoon. It must be scraped lengthwise of the fiber, so as not to break the fiber or get any of it in the pulp. It may be made into sandwiches, or formed into balls and seared in a hot pan without any fat. The value of the meat ball is apt to be counteracted in the cooking unless done by a skilled person, as it is very easily overcooked and the protein hardened until it is as bad as the fiber in the original piece of meat. The juice of the meat may be extracted by subjecting it to strong pressure. This is beneficial in cases of severe gastric disturbances, typhoid, and for infants after one year of age. In warming the juice for serving, care should be taken not to overheat it. Beef juice contains fourteen times as much protein as the average beef tea, but the beef tea is richer in flavor. They are very good when combined. Meats are our cheap source of protein. They are a concentrated food, and, because of the small amount of "ballast," they are readily attacked by the digestive juices and quite completely absorbed. They require a great deal of oxidation during digestion because of the fat present. As a people we east too much meat. Only the man who is doing hard, physical labor, or living out of doors, or doing both, needs, or can properly care for in the body, meat eaten three times a day. Yet I know of no hospital of any pretentions as to size where meat is not served three times daily to its private room patients, nor can the dietitian with impunity attempt to change this order. The maority of people with whom one discusses the subject will speak deploringly of the use of so much meat, but no one except the physicians will ever be able to alter the custom. Not until they convince their patients that it is a harmful practice, will there be any improvement. When will that be?

FISH AND OYSTERS.

Chicken and fish are perhaps the most natural substitutes for meat, as their nutritive value is much the same, with the exception that they contain a smaller percent of protein. Fish has fewer extractives, and therefore less decided flavor. The oily fishes—salmon, mackerel, herring, etc.—have higher food value than the nonoily—perch, cod, trout, etc. The theory that fish is a brain food has long been exploded, not only because we know there are no "brain foods," but there is no justification for the statement that fish is rich in phosphorus.

There is less waste in fish than in most animal foods, and it is less expensive. It serves as a variety in the diet, and, as a rule, is easily digested, which makes it well adapted to people living a sedentary life. This does not apply to lobster, shrimp, and those varieties of fish which are very "rich" foods and have no place on a hospital dietary. Oysters more nearly resemble milk than any other food material in regard to amount and proportion of nutriment. They are extremely easy of digestion; they should be slightly cooked and probably are more readily digested if not cooked at all. Combined with milk and butter and served with crackers, in the form of a stew, or thickened with a larger proportion of cracker or bread crumbs in an escallop, they are a very good food for convalescents or people who are exercising but little. The carbohydrate in oysters is in the form of glycogen.

There is a question in regard to the eating of raw oysters. They may have been "floated" in unclean water, or, if the oyster bed is near a city, there is danger of sewage contamination and typhoid "germs." The flavor of oysters is affected by the locality in which grown and the season of the year. They must be kept in a very low temperature, as they spoil quickly and should not be eaten after being in a warm room for any great length of time. This same thing might be said of any form of fish. In the decomposition of animal tissue, poisonous bodies called ptomaines are formed, which are the result of bacterial action. This action is quite apt to accompany putrefaction. We occasionally see oysters with a green color; this may be due to a plant on which they feed or it may be due to the presence of copper. If it be a grass-green and there is a slimy verdigris-like secretion in the folds, it is due to copper; but if a dark-green, it is due to the plant on which the oyster fed. This season we are finding on the market a pink variety, but the fancy color neither adds to nor detracts from its food value, unless it be from the copper.

Miss Amy Beers, who opened and has administered the Jefferson County Hospital at Fairfield, Iowa, for the past two years, has resigned to accept the position of first assistant superintendent of the training school at the New York City Hospital, Blackwell's Island, with 900 beds. The Blackwell's Island hospital is Miss Beers' alma mater, and under Miss Carolyn E. Gray, the new superintendent of the training school, an old friend, she returns to a most congenial home. Miss Beers' successor at Fairfield is Miss Luella Bristol, formerly superintendent of the Eleanor Moore Hospital, at Boone, Iowa, and president of the Iowa State League of Nursing Education. The Jefferson County Hospital, under Miss Beers, has really done wonders in the way of popularizing the county hospital idea, and the excellence of her institution has had no small part in inspiring the enactment of county hospital legislation in a number of states. The hospital world is indebted to Miss Beers for a fine piece of constructive work that was well worth doing.

THE HOSPITAL SUPERINTENDENT—PAST, PRESENT, AND FUTURE.[1]

Qualifications, Authority, and Responsibilities of the Hospital Superintendent—Duties of The Board of Trustees—An Ideal Organization Presented.

By WILLIAM H. WALSH, M. D.,
MEDICAL SUPERINTENDENT HOSPITAL FOR CONTAGIOUS DISEASES, PHILADELPHIA.

AN intelligent consideration of the hospital superintendent requires some allusion to the hospital itself. Assuming, however, that we are all more or less acquainted with American hospitals, their obligations, requirements, and limitations, the writer will proceed with his subject, making a brief reference to the relationship between the board of trustees and the superintendent; a critical contemplation of the superintendent of the past, observations on the standing of that official today, and a prophecy of his status in the future.

From the outset it is only fair to state that the success or failure of any superintendent is largely dependent on the policy dictated by the board of trustees, so that this body will be frequently referred to in order to define its relation to the superintendent.

Regardless of the manner in which the trustees may be chosen—whether by the contributors, the citizens, or by the courts—their responsibilities are the same, and direct personal liability should not differ from that of directors in commercial organizations. No more important duty devolves on the board than the choice of the superintendent, and, having selected for that position one who has the necessary qualifications and training, the board should from the start support, encourage, and advise him. It should recognize the necessity for the most rigid discipline, and realize that the superintendent is the one who is charged with its maintenance. No organization can work harmoniously unless there is one recognized head who is responsible for the success or failure of the administration; indeed, nothing can happen to more speedily disrupt a hospital than the ofttimes meddlesome attitude of overzealous trustees, who. either through conceit or ignorance, imagine themselves endowed with superlative executive ability.

From the outset the board of trustees should cause to be drafted a set of by-lays in which their prerogatives, together with those of the superintendent, should be clearly and concisely defined. In specifying the powers and privileges of the superintendent, the board should not proceed to such length as to make itself wholly secondary to the superintendent in any essential question of an administrative character. The superintendent should, of course, attend the regular meetings of the trustees, advise them, and give them the full benefit of all information and expert knowledge which he may possess concerning any subject that may come before him at any time.

There is no sound reason to exclude this administrative official from the board meetings, and to do so is equivalent to an expression of lack of confidence. It has been a source of considerable surprise to the writer to find so many hospital superintendents totally indifferent to this matter; some resent their banishment from board meetings, but lack the courage to demand an essential right: others do not presume to expect attendance, and a few do not desire personal representation. The board should recognize the desirability of having the superintendent present and recommend candidates whom he may consider as worthy and proper for any vacancies that may arise in the hospital, and no appointments should be made without his consultation and advice. As a hospital expert, he should be a guide and assistant to the board in the formation of its judgment, and, as the chief executive officer, there should be reasonable deference paid to his views and desires in order that he may perform his own duty in harmony with the entire working force of the hospital. In his supervision he should have the full right to recommend, or even to "indicate," the action of the board by pointing out what, in his opinion, should be done. But such a board of trustees should at all times reserve to itself the right to correct what it may believe to be errors of judgment in such an officer, or to decline acquiescence in his recommendations, for it cannot be assumed that the superintendent, no matter who he may be, may not be subject on some occasions to mistakes, prejudices, favoritism, or even folly in the formation of his official judgment.

Every board of trustees should be made to realize that affairs in the hospital world are moving (if not always progressing), and that the superintendent who is alive to his opportunities will be desirous of attending scientific meetings and conventions. In this laudable aim he should receive, not only the hearty support of the board, but his necessary expenses should be paid by that body.

HOSPITAL SUPERINTENDENT OF THE PAST.

Our early American hospitals, like other institutions of that day, were fashioned after the Eng-

[1]Read at the sixteenth annual conference of the American Hospital Association, St. Paul, August 25-28, 1914.

lish pattern, and indeed were inaugurated through the activities of medical men who were educated abroad, so that it is not surprising if even today we should observe striking similarities between some of the older hospitals of this country and those of England.

The organization and erection of a hospital and acquisition of the wherewithal to support it were even greater achievements a hundred years ago than today, so that, having succeeded under distressing difficulties, the organizers proposed to personally conduct those institutions which were the fruition of their untiring labor and zeal. Thus for years the early hospitals were governed by the more aggressive members of the staff, and indeed today we may still find hospitals practically controlled by certain of their physicians and surgeons. If the resident hospital clerk possessed the proud title of superintendent, the title was of small significance, for his position was that of a steward, and by that name he was generally known. As time went on, control of hospitals became more and more vested in the trustees, then often elected from the staff, so that the controlling body, while still perhaps the same individuals, became the board of trustees. The dual position of trustee and attending physician may be said to be an abuse that continues in some hospitals up to the present day, and is a distinct handicap, for obvious reasons, to efficient organization.

The history of a number of hospitals would indicate that the lay trustees realized the ill effects of having members of the staff on the board, for, as the years rolled on, this condition changed; indeed, the reaction was so complete that few medical men were even considered for managerial appointment, but the steward remained the figurehead he was, and the lay managers delegated to themselves the executive duties formerly performed by medical men. In one of the oldest hospitals in the country, during this period, it was customary for a different trustee to visit the hospital daily, make an inspection, issuing orders, and otherwise making his august presence known to all from the steward to the humble kitchen help. He performed the functions of the executive officer during the twenty-four hours of his reign, being succeeded the following day by another trustee with perhaps widely diverging ideas, but seldom lacking sufficient self-confidence for the snapshot solution of any and all the multitudinous problems that might be placed before him. The policies of such a hospital naturally changed with kaleidoscopic rapidity, as did also the personnel, so that it became difficult to secure qualified employees; this condition, too, has left its imprint up to the present day.

A few hospitals whose brilliant careers are well known to all, many years ago were sufficiently advanced in their ideas to see the necessity of the medical superintendent. A notable example is a prominent hospital in New York City, whose superintendent has retired after a continued service of twenty-three years. In this connection a recent editorial in a prominent hospital journal states: "Hospital people the world over have come to look to the Presbyterian Hospital of New York for the best there is in methods and purposes; its leadership has been safe and sound for these many years; its trustees have changed many times; its devoted supporters have come and gone; but, always as true as the needle to the pole, the fine old institution has gone its way—high and ever higher, and we know where the real leadership was."

However paradoxical it may sound, the much-beloved gentleman referred to in the above quotation, though now retiring after twenty-three years of continuous service, is the standard for the ideal superintendent of the future. When he began his labors a quarter of a century ago, his compeers were few, and, sad to say, a searching quest will not reveal many today who may be worthily compared with him.

But let us now scan the hospital world of today with the object of observing what progress, if any, has been made with respect to the hospital superintendent during the last twenty-five years.

HOSPITAL SUPERINTENDENT OF THE PRESENT.

A striking point that has been widely commented on is the wide dissimilarity, not only between the different classes of persons filling the post of superintendent, but the great difference in functions, duties, responsibilities, and compensation, as compared with each other, so that it is rarely indeed that we may encounter two hospitals identical in this respect. There does not seem to be any accepted standard by which a new hospital may be governed in the selection of its executive officers. In one institution we will meet a layman, chosen perhaps because of business ability previously demonstrated by success in some pursuit entirely dissimilar to the management of a hospital. The layman will have no authority over the medical side of the institution, and it is rare indeed that he is even invited to discuss such matters. If a member of the staff demands apparatus that is expensive or drugs that are of a doubtful value, it is entirely out of the question for a layman to discuss or even inquire as to their value or necessity, and the superintendent is compelled, often against his better judgment, to make purchases that might be avoided if he could have met the physician on common ground.

In another hospital we encounter a clergyman occupying the chief executive position frankly disclaiming any special qualifications for the post, having been elected to it by the members of a sectarian board. The hospital with such a head will perhaps be assured of a highly religious atmosphere, and, if it employs a good steward, an efficient resident physician, and a competent directress of nurses, the institution may continue its mediocre existence for many years, the functions of the superintendent being performed through the agency of the rubber stamp.

In still another institution we will encounter the pathetic spectacle of the physician superintendent, who, being highly respected in the community, but a rank failure in practicing his profession, is placed by kind friends and well-wishers in charge of a hospital under the assumption that there he would find a haven far removed from the strife and contentions of the day. The less said about this genus of hospital superintendent, the better, but it may be aptly remarked that a man who cannot successfully manage his own affairs is a poor selection for the government of an institution of the complexity of a hospital.

More and more since the advent of Florence Nightingale into the nursing field do we find trained nurses in the superintendent's chair; indeed, it may be said with all fairness that a trained nurse who has demonstrated her executive ability by ably handling nurses, and who naturally is a good housekeeper, is far superior from every standpoint to any other than the modern medical administrator. Under certain conditions, a small hospital may be, and many are today, efficiently managed by trained nurses, who, having received an elementary training in medicine, are far better able to form an opinion regarding medical affairs as related to hospital administration than a layman, a clergyman, or the untrained physician.

These are but a few of the persons of widely differing capabilities and qualifications whom the writer has found in charge of hospitals. It remained for a little town in China to exhibit a hospital presided over by the village undertaker, and my genial celestial friend gravely assured me that the arrangement was most satisfactory to all concerned.

Municipal hospitals are usually considered part of the "swag" of the dominant political party, and the superintendent is appointed by politicians who seldom have any regard for questions of economy or efficiency. There is no hesitancy in appointing anyone from a bricklayer to a disabled diplomat to preside over the loyal distribution of the taxpayer's money, and incidentally over the destiny of the unfortunate sick of the community.

Those who pay the piper are awakening, however, to the abuse of public charity, and a sincere effort is being made to place in executive and administrative positions men who are properly qualified by training and experience to fill them. The public must be educated to an understanding of the already proved fact that hospitals cannot be efficiently maintained as long as they are under the domination of politics. Such institutions, spending large sums of the revenue of a city or state, should be so far removed from the possibility of corrupt political interference that a change of administration would not throw out a competent superintendent, often causing a complete reversal of policy in the institution. Owing to the uncertainty of the tenure of office and to the premium placed on candidates who are sufficiently pliable to do the bidding of the appointing power, today municipal institutions are unable to secure the services of competent administrators. Many of our large cities find themselves in this unfortunate position, from which they will never extricate themselves until political considerations are made secondary to those of thrift, competency, and integrity.

The foregoing is a brief review of the present status of the hospital superintendent, and, though hackneyed, gives some idea of the diversified conceptions of the functions of the position and of the various individuals who are supposed to possess the necessary qualifications. This peculiar condition of affairs has never been duplicated in any other line of business organization, and the query naturally arises and is being forced on us by scientific engineers, whether hospitals are so widely different in their methods as to require such a variegated assortment of individuals as executives, and whether the business of a hospital is so simple and facile of comprehension as to make it entirely feasible for anyone to successfully master.

Is it possible for a clergyman, a nun, a business man, a physician, or a nurse to have the necessary qualifications to preside over an institution whose object is the treatment and care of the sick? In reply it may well be said that all things are possible, and that many laymen have acquired such conspicuous ability in hospital administration as to have become widely and favorably known throughout the country. In conceding this point, the writer would strongly emphasize his admiration for those exceptional individuals who, without advantage of a medical training, have built up some of our successful and efficient hospitals. But from the lips of those very persons have come the sad stories of their vicissitudes, and they, above all others, realize that the hospital world

today is facing a problem that cannot much longer be evaded, on the intelligent solution of which rests the fate of thousands of institutions supported by millions of dollars.

Those who have of late been actively engaged in the solicitation of bequests for charitable institutions are becoming fully alive to their shortcomings through the searching inquiries of those who are contemplating the donation of funds. The benevolently inclined member of a community who has amassed a fortune by the exercise of frugality and careful business methods wants to know a great deal about an institution before he opens his coffers. So, then, from a purely mercenary standpoint it behooves us to observe the writing on the wall—to analyze our defects, and to formulate a set of standards that may be pointed to with a true sense of pride.

HOSPITAL SUPERINTENDENT OF THE FUTURE.

For the same reason that a power plant requires the expert supervision of an engineer, that a steamship demands an expert navigator, and an army needs a soldier to direct its movements, an institution for the treatment of the sick imperatively demands a person trained along professional lines to supervise its activities. There seems to be a unanimity of opinion in favor of this proposition among the foremost hospital workers of the day, but these same experts will advance the argument that, owing to the scarcity of trained medical administrators, we are compelled to accept whatever material is available, and that the high salary demanded by competent men is prohibitive. If the same argument were advanced by a manufacturer with reference to the employment of an engineer to direct his power plant, he would find himself face to face with the stern mandates of the law. If the ship owner thought to economize by placing his ship under the command of an unlicensed master, he, too, would encounter legal obstacles; so also the army commanded by an unseasoned soldier would meet well-merited defeat.

If there are few medical men available to enter this field, it is the fault of the hospital world itself for its failure to provide the opportunities that such men demand. It is small wonder that a physician with the ability to administer a large general hospital should hesitate when he beholds the manner in which hospitals are being conducted, and it is not surprising if he should conclude that his energies might be more effectually exercised elsewhere.

The necessity for a medical superintendent would seem so apparent that it is somewhat amazing to discover so many institutions without such an official. Aside from the purely business aspect of a hospital, the superintendent should be acquainted with all questions of sanitation, determine the amount of air space necessary for the patients, and provide hygienic, comfortable living quarters for nurses and employees. He should coordinate the various branches of the hospital, and so understand medical records as to personally know that they are properly rendered. He must be familiar with the public health laws and of forensic medicine in order that he may protect his hospital when medico-legal questions arise. He is expected to pass on the quality of foods and their preparation, and to determine the necessary equipment for laboratories, operating rooms, and the medical and surgical wards. He should be so conversant with medical ethics as to enable him to diplomatically settle the vexatious questions that arise between different members of the staff and between the staff and outside physicians. He should be so familiar with the treatment of the sick as to be in a position to relieve the physicians and surgeons of every interlacing business detail. And, finally, the superintendent should be possessed of a judicial mind, which, with his medical education, would make it possible for him to detect any inefficiency on the part of the staff before it ruined the reputation of the hospital. The superintendent who understands these matters is better able to give his patients the care they require, and without such knowledge he is compelled to delegate to others the decision of many questions of the most vital importance from both the medical and economic standpoint.

It has been claimed that medical men are not good executives, an assertion that is not founded on fact. We are well acquainted with the three prominent army officers, the highest in rank in that body, who, starting their careers as physicians, later entered other branches of the service, and the writer could give innumerable instances of like nature.

Perhaps the most worthy objection advanced against the employment of medical superintendents is that the salaries demanded by such men are greater than the average hospital can afford, and, with respect to those hospitals whose incomes are less than $25,000 per annum, the writer considers this objection valid under present conditions. For such hospitals it would seem that the trained nurse would more closely approach the ideal administrator than anyone else.

The argument often advanced that physicians are poor business men is true in so far as it applies to those who have had no commercial training. A physician is as capable of imbibing such knowledge as anyone else with a normal mentality, and the experience of those few institutions that are

training such men today proves this assertion beyond the peradventure of a doubt.

It is an accepted fact that there are few qualified superintendents available today, so that, knowing this, we cannot longer evade our responsibilities in the matter of providing the means whereby those who desire to enter this field may be welcomed, encouraged, and assisted. Disregarding every claim to the contrary and every petty objection that may be advanced, it may be said with some degree of assurance that the hospital superintendent of the future will be a medically trained business administrator, and it is a solemn obligation of the modern hospital to provide the means for this highly specialized education.

When the large general hospitals open their doors to the apprentice who is desirous of becoming a hospital superintendent, there will be no scarcity of applicants for such berths. The young medical man desirous of entering this field will just as willingly give his services to the administration department as does the intern who willingly spends from one to three years without compensation for the purpose of gaining medical experience. No modern hospital should be without one or two such pupils, and the authorities should, on the faithful completion of his term, make every effort to place him in a suitable hospital. Such men, though not commanding large salaries during their early years, would be assured increased compensation as experience and ability ripened.

When every one of such institutions has fulfilled its duty fully in this direction, it will be possible for even the small hospital to obtain a qualified superintendent at a reasonable compensation. Medical men will then consider the hospital field a legitimate and honorable calling, knowing the opportunities for advancement. Then and not until then will the proper standards be reached.

The hospital which has the latent power of such an ideal organization will generate the dynamic force necessary to duplicate the brilliant achievements that have added so much luster to the history of American hospital development.

SAFETY FROM FIRE TO THE HELPLESS IN HOSPITALS.

Old-Fashioned Fire-Fighting Devices in Fireproof Buildings Is Waste of Money and Misdirected Effort—Fire Walls With Self-Closing Metal Doors More Logical—Patients May Be Moved From Burning Area Without Danger.

By H. F. J. PORTER, M. E., New York.

OF late the trend of advance in architecture and building has been from the nonfireproof stage of construction to one where the building materials are incombustible, and a building composed of them is unburnable. Especially has this advance been fostered in the hospital field. In the past it has been felt that the only way to make buildings of this type safe for their helpless occupants was to render the possibility of a fire occurring in them as remote as possible, for otherwise, should a fire increase to any considerable size in one of them in which bedridden patients were housed, it would be impossible, owing to the lack of attendants, to remove any great number of these people to safety in the short time which would probably be allowed. Many would therefore undoubtedly be burned to death.

It is curious to note the action of the normal mind in certain directions. Take, for instance, this particular field: one would suppose that, in the progress of the development in methods of more safe construction, customs which were necessary to be maintained in the nonfireproof building in order to extinguish fires and save lives would not be so necessary in the fireproof building, particularly if the furniture be fireproof, which is now possible, especially in hospitals where there is very little furniture anyway, and this is usually of steel.

In old hospital buildings, where the type of construction was such as to be a continuous fire menace, it was customary to have fire hose and standpipes with water pressure maintained in them, and, in addition, chemical fire extinguishers were supplied, and fire-fighting brigades were developed to operate this apparatus in case of need. Sprinkler systems were in some cases installed to assist by automatic operation the extinguishment of incipient fires in case of the absence of competent help, as might occur at night. Fire alarm signal systems were installed to notify promptly, in case of fire, the occupants of the buildings and to call the fire department of the city, and for the assembling of assistants to carry the patients down outside fire escapes, or to throw them into chutes. Fire drills were developed, so that the help would be instructed how to act in the latter emergency.

The object of the advance to the fireproof hospital was to secure a safe building in which all

this expensive fire-fighting and fire-escape installation and performance would be unnecessary. But what do we find? Modern hospitals constructed of steel, stone, brick, and concrete, containing iron beds and iron furniture, and nothing inflammable in them but the bedding, which could not possibly catch fire, for the electric lighting precludes the necessity for lamps, candles, or the use of matches, thus eliminating all ordinary sources of fire. And yet installed in these buildings are the same hose and stand-pipes, with the water pressure maintained, the same fire alarm signal systems and the same fire-fighting brigade, and even the fire drill to take the helpless patients out of the buildings in case of fire, when under no circumstances would a fire requiring such a removal of the patients be probable, for no fire could possibly occur that could not be put out with a pail of water or a hand extinguisher, and the flames could not under the most untoward circumstances spread beyond the room where it originated.

Elaborate fire escapes, although of absolutely no use or assistance to helpless or bedridden pa-

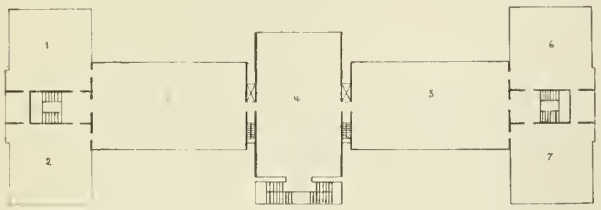

Fig. 1. Typical hospital building. The heavy lines indicate existing walls which were susceptible of being developed into fire walls, thus dividing the building into seven sections. In case of a fire occurring in any one of these sections, it would be confined to that section, thus endangering only one-seventh of the building, and necessitating the removal of only one-seventh of its occupants, who can be wheeled to safety into either or both of two adjoining sections. As the stairs and elevators will not be required for the escape of the occupants, they will be available for the use of the fire fighters in reaching the fire promptly.

tients, also continue to be erected on fireproof hospital buildings. These not only disfigure the buildings, but are worse than an actual waste of money, for the latter is spent in applying to the buildings appendages which are in themselves sources of accident, and in case of use in emergency may cause fatalities.

Let us in the future omit all these unnecessary relics of obsolete wooden construction, and with the resultant saving in money give our hospitals a safe design, build them fireproof, and supply them with nothing but fireproof furniture and equipment.

So much for future buildings. But how about the thousands of nonfireproof hospitals already existing? Here is a matter of vital importance that should interest people generally, for no one can know how soon he may himself become an inmate of one of these institutions. Is it necessary to tear down the old buildings and put up new ones in order to insure the desired safety to their inmates? It would cost enormous sums of money to replace these old buildings throughout the country with new ones of modern construction. Many of them are so substantially built that they will last for many years, and, as far as the convenience of arrangement of rooms, service, etc., are concerned, they could scarcely be improved. Obviously, however, something must be done with them, for they house hundreds of thousands of helpless patients who in case of fire would probably perish. It is a very serious responsibility which public officials assume when they send the helpless wards of their respective communities to buildings which are nonfireproof, and from which, if a fire should occur in them, they could not be rescued. It is these hospitals which we must now consider, to determine if ways cannot be devised of making them reasonably safe for their occupants without entailing prohibitive expense.

Until recently no serious effort had been made in this direction, with the exception of supplying sprinkler systems and "down-and-out" chutes, neither of which can be considered a practical means of meeting the situation. Sprinklers do not operate until a fire occurs and has reached a magnitude sufficient to develop a temperature in which human beings cannot long exist, and, as gases and smoke accompany this temperature, the physical and mental agony of the patients would have a very injurious effect on them, and probably many of them would be suffocated before they could be rescued from such an environment. Nor can people who are ill or suffering from surgical operations be unceremoniously seized, dragged on the floor, and thrown into chutes, or carried down fire escapes or smokeproof towers, with any hope of escaping serious and possibly fatal injury.

To meet this condition, as soon as I learned of it several years ago, I adapted to hospital buildings a method which I had developed some time previously of making other types of buildings safe for their occupants, as described in my article in the last number of THE MODERN HOSPITAL. I provided in these buildings fireproof division walls with doorways in them, closed by self-closing fireproof doors, thus dividing them into sections, in any one of which, should a fire occur, it would be confined there. I supplied each of the patients' beds with special casters under its head-posts and an iron lifting strap at its foot-board, so that, in case of fire, all that would be necessary to save the patients in that section would be for an attendant to lift the foot of the bed and trundle it through one of the doorways in the fire wall into one of the

adjoining sections and close the door after them. This affords a "horizontal escape" from the fire, the fire walls and fire doors serving as effective barriers to the fire, and the patients thus reach safety without being taken from their beds and with the least amount of disturbance. Such an arrangement finds a parallel in the watertight bulkheads and sections of the ocean steamer.

Almost all of the old hospitals have started with the idea of future development, and later, as they have grown, have had additions made to them in the shape of wings, generally in such a way as to form a symmetrical design. In such cases the walls between the original building and the wings afford an opportunity to develop the necessary fire walls. These walls are never found perfectly effective or satisfactory for the purpose of fire walls, for they were not built for that purpose, but they can usually be made so, readily and

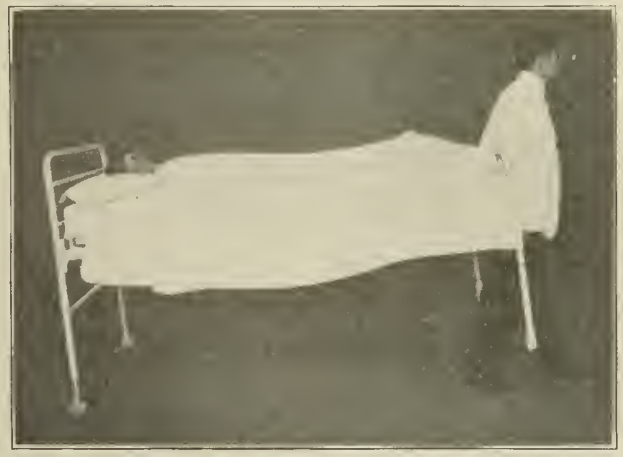

Fig. 2. Attendant wheeling helpless patient to safety in case of fire. The head-posts are provided with specially designed felt-tired casters which do not swivel. The bed is, therefore, normally on four stationary supports, but, when the foot is raised, the bed can be trundled straight ahead like a wheelbarrow. The foot-posts have felt plugs, which, as with the casters, are slipped over the legs and fastened there rigidly.

at small expense, without affecting the ordinary uses of the building. In the absence of existing party walls, other favorable conditions are frequently found permitting the development of horizontal escapes without prohibitive cost, or it may prove necessary to build an entirely new fire wall running continuously from the cellar to and through the roof, following the line of an existing partition across the building in a strategic position, which is often found to be at a narrow part of the structure. Such a wall develops the sectional division which is essential for this method of effecting a safe escape from fire. Wired glass in self-closing metal sash and metal frames must be provided in window openings which front on hazardous exposures, and in store rooms where inflammable materials and supplies are kept, and certain other details must be provided to make the scheme complete, and which experience in this field dictates as essential for fire protection. The fire wall must be so located that a stairway, elevator, or other means of exit exists on each side of it, to enable people who may be segregated there to descend to the ground if necessary. These and other features of a similar character are indispensable to complete the scheme, but which would not ordinarily come within the knowledge of the untechnical building owner.

Of course a knowledge of structural materials and correct methods of design and construction of buildings, as well as actual experience in dealing with helpless persons, is also necessary to carry out this method of treating a building, so as to render the result not only perfectly safe and satisfactory, but to obtain that result in the most economical manner.

If there are any oversights or omissions in the treatment, so that weak links remain, a fire may eat through them and render the whole scheme abortive. A complete understanding and knowledge of this method of procedure in all its details are essential; otherwise the result may be a fire trap, and, instead of affording safety, fatalities may result at the critical moment.

When the building is properly rearranged and modified so as to accomplish horizontal escape to safety, it must be equipped with a fire alarm system especially adapted to the new conditions and requirements. A suitable signal should notify only the people within the endangered section where the fire is, thus informing them of the necessity to move out, and should give this information in such a manner as not to unduly excite those who are ill. It will also automatically call the fire-fighting force to the site, and the fire can be either extinguished in its incipiency or confined to the section in which it originated.

Let us consider for the moment these latter features—namely, the fire alarm system and the fire-fighting force suitable to accompany this method of treatment.

Fire alarm systems, as ordinarily designed for hospitals, seem to be patterned after those which one finds in country districts, the requirements being similar, inasmuch as both a village and a large hospital consist of an aggregation of buildings. Under these conditions the fire alarm system consists of fire alarm boxes scattered throughout the buildings and grounds, connecting usually with the power plant. When a fire alarm box is operated, a whistle in the power plant is blown, indicating by the signal the locality of that particular box. The people, knowing that the fire is in one of the buildings located in the vicinity of this box, go there and to the best of their ability help the inmates to escape from the burning

building, and the fire-fighting force also rushes to the place and endeavors to extinguish the fire. As the whistle can be heard by everybody in the buildings within a certain radius, and, in the case of a hospital, as a large number of the occupants of the building may be absolutely helpless, naturally a signal of this kind, indicating danger, is apt to have a disturbing effect on them, particularly on those who may be seriously ill or of a highly nervous temperament.

The special design of building and method of saving the lives of these patients which I developed calls for a particular type of fire alarm system that does not possess these undesirable features. At least one fire alarm box is located on each floor of each section between the fire walls, and, when a fire occurs on any floor, the box located there is operated, and, by means of colored lights and buzzers which do not unduly disturb the patients, informs the nurses or other attendants on that and every other floor in that section only that there is a fire in that section, the number of flashes and buzzes indicating the floor on which the fire is located. The signal is simultaneously transmitted also to the buildings where the help is gathered at work during the day time, or in their dormitories at night, where by loud gongs it calls them to the fire to lend such assistance as may be necessary both to extinguish the fire and to wheel the bedridden patients on their beds to safety.

It is frequently stated that there is no fire (except, of course, one caused by an explosion) which cannot be extinguished at its inception by a pail of water. The principle on which I am working is that of fire prevention and of fire extinguishment at the inception of a fire. For these purposes I endeavor to create such conditions that a fire is not likely to occur, but nevertheless to have fire extinguishers convenient and attendants educated to use them, so that, should by any possibility a fire occur, it can be extinguished before it passes the incipient stage. I also take precautions against the possible spread of fire, and install the fire alarm system of the character described to call a more experienced fire-fighting force, who will be capable of putting out the fire or holding it in subjection until the arrival of the local fire department.

A full realization of the limited capabilities of the unskilled attendants to extinguish incipient fires, and also those who are assigned to the further duty of fighting a spreading fire, must be possessed by the hospital authorities.

Fire is one of the most obstinate and baffling occurrences with which man has to deal. Even firemen who have spent many years in the service often lose their lives from some slight negligence or carelessness. Years of experience are required to understand the vagaries of a fire in a nonfireproof building. Smoke may issue through a crack in the floor and appear in this particular spot because it is the only vent through which it can escape, leading an inexperienced fire fighter to imagine the fire is located there, whereas it may be in an entirely different part of the building, and, if time is spent in endeavoring to extinguish the fire at the wrong point, it may spread so rapidly at its source as to cut off all means of escape. Intelligence based on knowledge of and experience with fires must necessarily be possessed in order to be effective in efforts to extinguish fires whose source is not immediately apparent. Should, therefore, a fire spread so that it cannot be readily extinguished by the amateur fire fighters with pails of water or chemical fire extinguishers, experience has shown that it is better for them to withdraw and seek their own safety than to attempt to remain and fight the fire with such implements as the standard size hose with high water pressure, to the use of which only able-bodied, experienced, and thoroughly skilled firemen are accustomed.

The essential principles, therefore, which I am advocating in my scheme of providing safety for the lives of the helpless inmates of hospitals are, first, to take such precautionary measures as will tend to prevent a fire; then, should one occur, to arrange for its prompt extinguishment at its source when it is small, and in the meanwhile to provide ready egress from its proximity for the helpless patients without disturbing them. Should the fire extend beyond the ability of the fire fighters to extinguish it, it will at all events be confined to the section of the building between the fire walls, from which only a comparatively small number of people have had to be removed to safety. By this plan only those in the section in which the fire occurs would be in danger and would have to be moved, leaving all the occupants of the other sections of the building undisturbed. The maximum damage to or loss of property would also be confined to the endangered section, thus greatly reducing the possible property loss, and often diminishing the insurance premiums to such a degree that the amount so saved more than pays the interest on the cost of the improvements.

A plan for the erection of a larger and more modern building for the South Omaha (Neb.) Hospital was announced following a recent meeting of the hospital board. According to the report, the need of larger quarters has long been felt. The present hospital was built by the people of the city, and all of the profits derived from it are turned into improvements. The institution is nonsectarian.

RAISING FUNDS AND FINANCING A SMALL HOSPITAL.[1]

Institutions Must Be Popularized by Cooperation and Harmony Within—Appeals to the Public Will Then Be Heeded—Continuous Begging Unwise, But Occasional Campaigns Should Be Made—Organized Solicitation.

By MISS NETTIE B. JORDAN, Superintendent Aurora General Hospital, Aurora, Ill.

PAPER I.

THE poet who said "the love of money is the root of all evil" stimulated his own roots to produce long hair instead of long green. He could never have been inspired to write how to run a hospital without money. The day is past when we discuss hospital finances in a sepulchral whisper, fearful of what the public will say. The hospital is fortunate indeed that has an adequate endowment, but the vast number of hospitals in this country require a constant quest of the elusive eagle.

The Aurora Hospital, of which the writer is the administrator, represents a type of hospital found in the greater number of the smaller cities, and may justly be termed a community hospital. Aurora is a dot found on any Illinois map about forty miles west of Chicago, and within its precincts are found about 35,000 people, with an additional clientele of 15,000 in a radius of fifteen miles. The far greater percent of the people are wage-earning and rural, and so do not represent great wealth and are not monuments of philanthropy. Out of a group of such people one finds many enterprising and public-spirited individuals who are willing to espouse a worthy cause that will bring honor to their city. In this same territory are found two orders of sisters operating hospitals, and combining the three, there is one hospital bed to each 400 inhabitants. Nearly every small city has this type of hospital competition, and a sharper line is drawn by the religious organizations than in the larger cities; thus the hospitals are known as either Protestant or Catholic. With this distinction, there is some difference when money is solicited from the public.

The Aurora Hospital is nonsectarian as to its incorporation and system of electing members on its board, but is commonly known as "the Protestant hospital." It may be classified in hospital parlance as an "open door" hospital, or one which does not have a closed staff, but admits the patients of all reputable practicing physicians; thus the standard of service delicately devolves on the superintendent. The hospital has maintained the broad policy of admitting all who were acutely ill, regardless of race, creed, or financial condition. Our hospital organization does not boast of greater financial success than other institutions of its size. There are certain underlying principles, which make possible the success of the hospital, that are more important than the mere statistics of money raised.

To me the word "harmony" is the most sacred word in the English language when applied to the hospital organization, for without it little real progress can be made. 'Tis a sad day indeed when the angel of harmony falls ill and the vulture of discord holds sway, for its talons grow longer and sharper if it is allowed to live.

A hospital head has a more delicate task than a tight-rope walker who crosses the Niagara Falls, for in the one it requires physical balance and in the other perfect mental poise. In other words, it requires a dynamic character and a bottled-up magneto. The superintendent must be the logical leader of the organization, and cannot be unless he or she is a great student of human nature as well as informed in hospital technic. So much for the type of superintendent.

Then there must be a live, constructive board, or the hospital will make little real progress. Even to the hospital workers death is always uncanny, and, if there is one dead board member in the midst, it solemnizes the activities of the rest. My advice is to secure a baggage car ticket and ship them back to their loved ones for the obsequies.

I feel that whatever success may be credited to our hospital is due to the present board, whose personnel has changed almost to the last member during my administration, and thus the fossils have been relegated to their respective places in the museum of life. The board members consist of twelve men and three women, all representing an influential clientele in the city because of their business and social standing. Their value is manifold because of a broad business acumen, which enables them to regard the greater interests of the hospital as their specific duty, such as providing funds for work, providing a proper building for the sick, and to serve as a medium whereby hospital complaints may be analyzed and causes removed. The trustees are elected by the churches, lodges, and life members who have contributed money to the institution. For each $100 given, one annual vote for life is allowed.

[1] This is the first of a series of papers on the Administration of a "Small, Self-Supporting Hospital." Next month, "Business System in the Small Hospital."

Everything that is worth while is cooperative, and a hospital administrator must realize and give due regard to the various forces which are constructive or destructive to the organization. On the premise that it takes a hundred friends to offset the influence of one enemy, the philosophy of success depends largely on the major number of active supporters espousing a cause. One of the unaccountable traits of character found in the dear public is the wave of sentiment that works for or against a given proposition. It behooves the hospital workers to strive to keep their standards so high that their institutions are above reproach.

Some suggestions which may be mentally indexed by the superintendents themselves may be mentioned. First of all, keep your doctors happy and in full accord with what you are doing, for a disgruntled one can do more harm than a germ. Many times temperamentally they are like schoolboys, but physically have outgrown the ferrule. Never tolerate a discourtesy to a patient by nurses or employees; regard hospital visitors as guests and not as book agents. Keep "square" with the newspaper men, for they hold a scepter of power which can direct the tide of sentiment for or against you. The newspapers in a small city keep a hospital favorably in the public eye quite the same as other public institutions and do not betray the private interests of an individual. Such items as incubator babies, transfusion of blood from parent to child, extensive skin graft, observance of mothers' day, training school news, and kindred topics keeps the public alive to your existence. With the combined elements which go to inspire public approval, any organized effort for money will be met with a spontaneity that is pleasing and productive of good results.

The first source of income is from the patients themselves. Our rates are very low, and have not been advanced with the increased prices in every line. There is the present competition of the other hospitals, and we have a very old building, which, like most small hospitals, is poorly planned. In spite of the accommodations, the hospital has run at its fullest capacity for a number of years. The private rooms are all $15 a week and wards $1 a day. Very little money is uncollected on the private rooms, for the doctors cooperate and give the patients' ratings before they are admitted to a room. The bills that are uncollectible in the wards are presented to the county supervisor and he allows part of it. We keep the cards on file, and work them in until the account is closed. From this source we obtain about $1,000 a year. The city allows the hospital $750 a year.

Accident insurance under the liability act pays some accounts. Nearly all the manufacturers have their men insured, so that at least a ward rate is collectible. The financial problem which this hospital and others of its type have is not the collections on the earnings, but the difference between the earning power and the cost of operation.

Five years ago our deficit was less than $1,000, and for 1914 the deficit will be $2,500. The per capita cost for 1914 was $1.83, and this amount is not a test or precedent for other hospitals, for with that amount patients have been crowded into quarters that were far from ideal, but I am sure that in our new hospital, which is nearing completion, the rate will not exceed $2.25 a day. At the present time there is no arrangement for an annual campaign, for we have been successful in raising large enough amounts to handle the deficit for a number of years at a time.

In the preceding paragraphs the kind of hospital organization has been shown and also the policy which maintained civic support; then, when an effort was made to secure money, it met with success. There have been three organized efforts to raise money. The first was a bazar conducted by the Woman's Club, and $10,000 was raised. The second was the charity tag day, and $5,000 was cleared. The third was a very extensive campaign for a new building, under the management of a professional campaigner, and $116,000 was pledged. A new 100-bed hospital is in the process of building now which will cost $15,000 to $20,000 more than the amount pledged, so that another effort will be made within the coming year to liquidate the indebtedness.

The bazar was conducted by the Woman's Club of 250 members. The organization consisted of a chairman and about five vice-chairmen, whose duties were assigned until every one of the members had something to do. The arrangements committee took care of the Armory, the place of meeting, advertising, transportation of articles, assignment of booths, etc. The entertainment committee provided two performances daily, afternoon and evening, at the leading theater for the four days of the bazar. The last evening a fancy ball was given, where the booths of the week were made into fancy boxes and sold for $5 and $10 each. Each couple was charged $5, and $2,000 was realized on the ball alone.

The soliciting committee secured anything as donations from the merchants or tradesmen that could be sold; the cash donations amounted to nearly $2,000, and the articles were sold from the booths. In no instance were chances sold on any article. The committee on booths were given free service from Marshall Field, and the old Armory was such a paradise that people came

from a great distance to see the display. The finance committee handled the funds and paid the incidental expenses. The dinner committee provided meals, which were served in the churches noon and evening.

A tag day was the second organized effort to obtain money, and I wish to say that, as a plan to obtain a goodly amount of money for a minimum amount of effort and without sacrifice to any donor, the tag day is a good means of securing money in a small city. I should discourage such a plan in a large city, where it may assume an aspect of commercialism. In a small city, where the merchants, manufacturers, and all organized tradesmen cooperate and invite solicitation of their employees, it makes a gala day in which everybody enters into the spirit, and only those born in the dark of the moon raise any objection.

The hospital board served as the executive committee and secured the city hall as a meeting place, and then advertised for all interested citizens to be present. Committees were formed for the duties of advertising, finance, arrangements, woman's committee, and out of town.

The advertising committee secured the cooperation of the city papers, and all advertising, cartoons, and special notices were given gratis. Large placards were printed showing a nurse pouring medicine into a glass, with large letters at the top, "Aurora Hospital needs your help today," and at the bottom, "You may need its help tomorrow." These cards were placed in all the windows of places of business a few days before tag day. The country newspapers for some distance around advertised the affair in the same manner.

The finance committee had for its chairman a popular manufacturer, and the day before started a messenger with a subscription list, telephoning the head of each company in advance of the messenger, and about $2,000 was subscribed before tag day arrived. He appointed tellers from responsible people, and had the cooperation of the bank that handles the hospital funds, who sent men to care for the money and transfer it safely to the bank.

The committee on arrangements secured tags. boxes, pennants, and accommodations for out-of-town taggers.

The woman's committee had one chairman, who assigned precinct chairmen, who in turn selected committees of workers, who prepared the tags and boxes and secured ten taggers, so that there were about two hundred taggers; no one escaped, for the residence section was visited in the morning and the ones having the lighter work assisted on the congested business streets in the afternoon.

I do not believe in frequent solicitations for small amounts, and the results are better if a well-organized effort is made once in awhile.

The last campaign was organized and managed by a professional campaign manager. I think the success of any of these campaigns depends on the amount of publicity given them and perfect team work, which turns the city into a carnival that directs its earnings into a definite fund. Giving, like many other human qualities, becomes a habit, and the more of this kind of habit that can be cultivated the better for all civic enterprises. Through agitation of this kind, people begin to remember the public institutions in their wills, and thus their permanency is assured.

A superintendent of a community hospital may dream of golden clouds, which are ready to burst with a shower of dimes and dollars, but that officials awakens to find them minted at the end of the rainbow, and an everlasting quest must be made to secure them.

BREAD SHOULD BE WRAPPED.

Colon Bacilli Contaminate 62 Percent of Unwrapped Loaves in New York—Wrapped Bread Also Keeps Fresh Far Longer.

The New York City Health Department has issued the following study on bread, the value of which work to the people everywhere can hardly be exaggerated:

Some experiments recently made in the health department's research laboratory bear out the contention that the only clean bread is that wrapped in the bakery, the wrapping being done in such manner that after baking no hand touches the loaf till it reaches the consumer.

From the details of the study as here reproduced it will be seen that the wrapped bread at present on the market is generally free from bacilli of the colon group, but that the unwrapped loaves, directly in proportion to their exposure, are usually so contaminated.[1] A report of a similar study made under the auspices of the United States Department of Agriculture appears in the September number of the *American Journal of Public Health* and presents similar conclusions. Only 7 percent of the samples of wrapped bread showed bacilli of the colon group, as compared to 62 percent for the unwrapped bread.

The federal investigators found that wrapping added less than 5 percent to the cost of a loaf, and that the keeping qualities of the bread were greatly enhanced, no change in flavor being discoverable after 42 or even 114 hours. During the 42-hour period, loaves wrapped three hours after baking, in various varieties of paper (waxed and unwaxed) lost on an average less than 2 percent in weight from evaporation, and only ½ percent in paper waxed on both sides. Compared to this, unwrapped bread exposed lost about 12 percent, and even in a glass case 10 percent during the same period. Since evaporation (drying) is the chief factor tending to make stale bread unsalable, the possibility of saving to a baker is evident, and would undoubtedly more than balance the extra cost of wrapping.

Miss Katherine Hoffmann, formerly of Walla Walla, Wash., a graduate of the Ensworth Hospital, St. Joseph, Mo., also a graduate of the Pennsylvania Orthopedic Institute and School of Mechanotherapy, Philadelphia, has been placed in charge of the mechanical department of the Phipps Psychiatric Clinic of the Johns Hopkins Hospital, Baltimore, Md.

[1]Since colon bacilli are always derived from intestinal excreta, the significance of such findings is obvious.

TWILIGHT SLEEP—THE RIGHT WAY AND THE WRONG WAY.

Before One May Condemn the Method, He Must Employ It Correctly—That Is not Being Done in This Country—Duty of the Hospital to See That the Freiburg Technic Is Employed.

By WM. H. KNIPE, A. M., M. D.,

ADJUNCT PROFESSOR OF OBSTETRICS, POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ATTENDING OBSTETRICIAN GOUVERNEUR HOSPITAL, NEW YORK.

THE general term "twilight sleep" has been employed to describe any and every method of giving scopolamin, hyoscin, and morphin in labor. There is much confusion in the minds of many men regarding the real "twilight sleep." The writings of a few of our eminent obstetricians, some of whom have visited Freiburg, seem to prove that there is lacking an exact and adequate knowledge of the "Dämmerschlaf" of Drs. Krönig and Gauss. It is, therefore, not surprising that, in discussing various methods under the general term "twilight sleep," there should be opinions as various as the methods used.

It must be remembered that scopolamin, hyoscin, and morphin have been used in labor in this country and abroad for more than ten years, but "twilight sleep" had not been used by any of us in this country until within the last few months. By "twilight sleep" I mean the method of using scopolamin and morphin to produce analgesia and amnesia, as developed by Krönig and Gauss in Freiburg.

"Twilight sleep" is nothing more than a matter of (1) pure drugs and (2) technic, and in this country, until very recently, we have used neither. Moreover, there were many clinics in Europe using impure drugs and improper technic that reported bad results with what they were pleased to call "twilight sleep."

In our country Newell, of Boston, came the nearest to the Freiburg method in the use of scopolamin and morphin, but even his solutions and technic differed widely from that used by Gauss. A much-advertised tablet containing hyoscin and morphin in a large dose has been used by many men, and justly discarded because of the dangerous complications following its use. We may look forward to reports of men who, after using these tablets, will tell us they have been using "twilight sleep," and poor "Dämmerschlaf" will have to stand the blame.

There is another group of men, many of whom have visited Freiburg, who will use the method published by Siegel, one of the assistants at the Freiburg Frauenclinic. This is a routine method of using the drugs in which there is entirely too much narcoplin in many cases and in some cases too much scopolamin. Naturally, there will be a certain number of patients who do not fit the routine scheme, and among these there will be a number of bad results. This method is "the easiest way," and "Dämmerschlaf" stands the blame.

I think that Krönig and Gauss are partly to blame for not stating that this Siegel method is only a new experiment in an attempt to simplify the method of "twilight sleep." Most of the men visiting Freiburg see this Siegel method used in the fourth class, and they see nothing else, and, as no one takes the pains to give them a liberal education in "twilight sleep," they naturally leave Freiburg believing they have witnessed the real "Dämmerschlaf" as practiced by Krönig and Gauss. I confess that it was by accident that I discovered the truth of this matter, and on inquiry of Krönig and Gauss the facts were stated and the true Freiburg method was made known. It was necessary to dig for this information.

It seems a great pity that so many Americans, including some of our eminent obstetricians, have visited Freiburg and have returned with so little real information concerning "twilight sleep." The Freiburg method has been freely reported by Krönig and especially by Gauss, and the blame must finally rest on ourselves for not being properly informed.

We hear as much criticism of "twilight sleep" in particular cases demanding craniotomy or the use of forceps as one would expect if the injections of scopolamin and morphin were a cure-all. We cannot expect "twilight sleep" to enlarge a contracted pelvis nor reduce the size of an overterm child; neither should the method bear the blame for bad obstetrical judgment.

The Freiburg "twilight sleep" is nothing but a very mild half-anesthesia, and, if the forces of labor are interfered with to any considerable degree, it means that in the particular case the drugs were not used with sufficiently good judgment. No one who has had experience with the Gauss method maintains that the drugs may be used without discrimination.

There is just as much difference between a proper and an improper "twilight sleep" as there is between an ether anesthesia given by a profes-

sional expert and that given by a raw intern or an inexperienced practitioner. There is no more excuse for giving scopolamin in a routine way, and without regard to the reaction of the patient, than there is for a routine dosage in ether anesthesia.

If the hospitals will furnish a proper environment for "twilight sleep," and the physicians of this country will make an attempt to ascertain what the real Freiburg method is, and then use the method with judgment before giving expression to a prejudice which is unscientific and unreasonable, the opinion of these physicians will command more respect from those seeking the truth.

It is well for us to remember that if the formally reported results with "Dämmerschlaf" as practiced by Krönig and Gauss are based on truth —and our experience seems to prove that this is so—no amount of vituperation or ill-concealed envy by our physicians will stop the just demand of women for "twilight sleep," and it is perhaps not out of place to suggest that a little more investigation and a little less vituperation will best serve the physician, the patient and the hospital.

SYSTEMATIC AMBULANCE SERVICE FOR METROPOLITAN HOSPITALS.

New York's Experience Demonstrates That Electrics, Gasoline Cars, and Horses Have Definite Use—Figures of Cost Differ Widely and Are Not Complete—Some Comparisons.

By NORMAN MAUL, New York.

SERVING more than 100,000 sufferers a year, the ambulances that bring emergency relief to the sick and injured of New York render a service that is not equaled elsewhere in this country. Even in continental Europe it is doubtful if the work is surpassed. New York's emergency ambulances treated 114,453 patients during 1913. The number will exceed 125,000 this year.

In rendering this service, 41 public and semi-private hospitals are subject to the call of the city, while more than 100 ambulances are held in instant readiness to respond to the call for help. Needless to say, the maintenance of this ambulance service has presented many problems for solution, and therefore a study of New York's methods should prove of interest to those concerned in ambulance work.

THE BOARD OF AMBULANCE SERVICE.

All ambulances designated for emergency calls operate under the supervision of the Board of Ambulance Service. This consists of the police commissioner, who is its president; the charities commissioner, who serves as secretary; the president of Bellevue and Allied Hospitals, and two members who are appointed by the mayor. The establishment of the board was authorized by the state Legislature in 1909, but its duties were not assumed until 1911. The effect of supervision on a service that heretofore had been run rather loosely and without a responsible head was at once apparent.

There was a decided improvement in equipment. Calls were responded to more promptly, and, as the powers of the board began to be felt, there was a marked falling off in the number of complaints regarding the service. Before the establishment of the board each hospital conducted its ambulance work as it saw fit. Any driver would do, and generally the cheapest was employed. Surgeons were answerable only to their medical board, and undergraduate interns were often sent out on the "bus." Cases were sometimes left in the station house that should have been brought to the hospital. There was no system under which hospitals were paid for their work, and no means of supervising the expense of operation or the efficiency of the ambulances. There were frequent disputes among the hospitals regarding district boundaries, and cases were often "stolen" by the ambulance drivers.

Quite a different condition exists now. There is a periodical inspection of ambulances, their equipment, and operating methods; each hospital renders a monthly report to the city of its ambulance calls as made from day to day; the history of every surgeon proposed for the service is secured, and no one may ride the bus who has not been approved; the bills for ambulance maintenance in such hospitals as are under contract with the board are verified; the district which each hospital shall cover is determined, and all complaints, regardless of their nature, are investigated.

In its supervision of surgeons, the board in the first two and a half years passed on the qualifications of upward of 300 men, 17 of whom failed to meet the required standard. During 1912 two surgeons were suspended and one dismissed from the service for dereliction of duty. It is within the power of the board to take the ambulance district from any hospital that fails to conform to its

requirements, but this power has never been exercised, for hospital superintendents have cooperated with the board in every way for the betterment of the service.

THE INFLUENCE OF THE AUTOMOBILE.

The ambulance service, in common with commercial and industrial progress, has felt the influence of the development of the motor car. New York's first autoambulance was placed in service about sixteen years ago. Today, of the 99 ambulances under the board's supervision, 58 are motor-driven. This development was slow at first, but has moved rapidly during the past two years.

Fig. 1. Army type of ambulance used by Bellevue Hospital in inaugurating an emergency service in New York in 1869.

In 1911 there were 22 motor ambulances, in 1912 there were but 26, while at the end of 1913 there were 51, with the prospect of more being added during the present year.

HORSES INDISPENSABLE.

Yet, while motor ambulances are increasing every year, the time should never come when the horse will be entirely discarded. This statement may seem strange when the economy and speed of a motor equipment are compared with the slower

Fig. 2. Harlem Hospital's electric—Bellevue and Allied Hospitals operate seven electrics, four gasoline cars, and two steamers, augmented by a stable of horses.

and more expensive horse ambulance, but during last winter's blizzard in New York the horse saved the service. High-powered cars were helpless in the drifts, but horses working in teams pulled through. Many "progressive" hospitals that had graduated from the antiquated horse had to transfer their calls to their less "advanced" neighbors, and for two days the horse ruled the situation. After the snow began to pack and the streets were fairly passable, the motors resumed operations, and the horses were given their well-earned rest. In fact, after the snow drifts had been removed and only the icy coating remained on the pavement, the going became so bad that it was positively dangerous to take out a horse.

ESTABLISHMENT OF EMERGENCY AMBULANCES.

New York emergency ambulance service dates back to 1869, when Dr. Edward B. Dalton inaugurated the work at Bellevue. Dr. Dalton had been in charge of the field hospital ambulance corps of the Army of the Potomac during the Civil War, and when he was requested to submit a plan of ambulance operation for New York he was

Fig. 3. Fast gasoline ambulance used by St. Joseph's Hospital for long runs through the Borough of Queens.

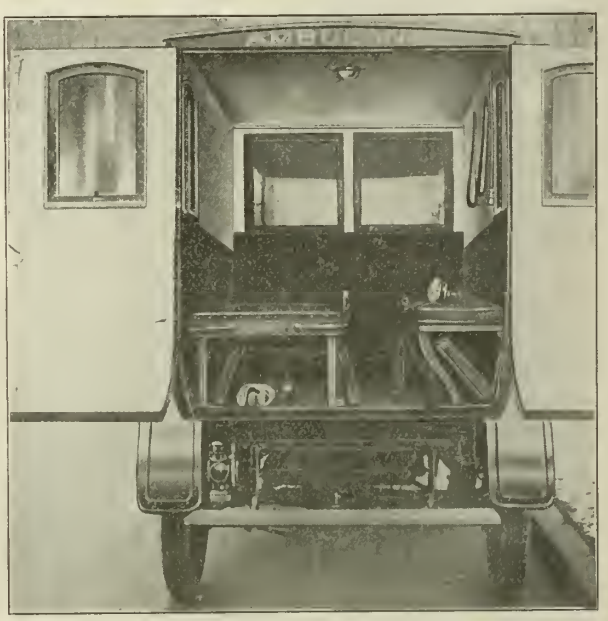

Fig. 4. Interior of St. Joseph's Hospital ambulance.

guided largely by his battlefield experience. The methods installed then have remained practically unchanged during the forty-odd years since; in fact, they have served as a pattern that has been widely copied throughout the country. The ambu-

lance equipment at that time consisted of two vehicles, similar to those used in the army, but of lighter construction. The next year five more were added.

That there had been need for such service was at once evident, for in 1870 the ambulances responded to 1,401 calls. In 1891 Bellevue ambulances answered 4,392 calls, and the number increased every year despite the fact that eventually Bellevue had to share its operations with other institutions.

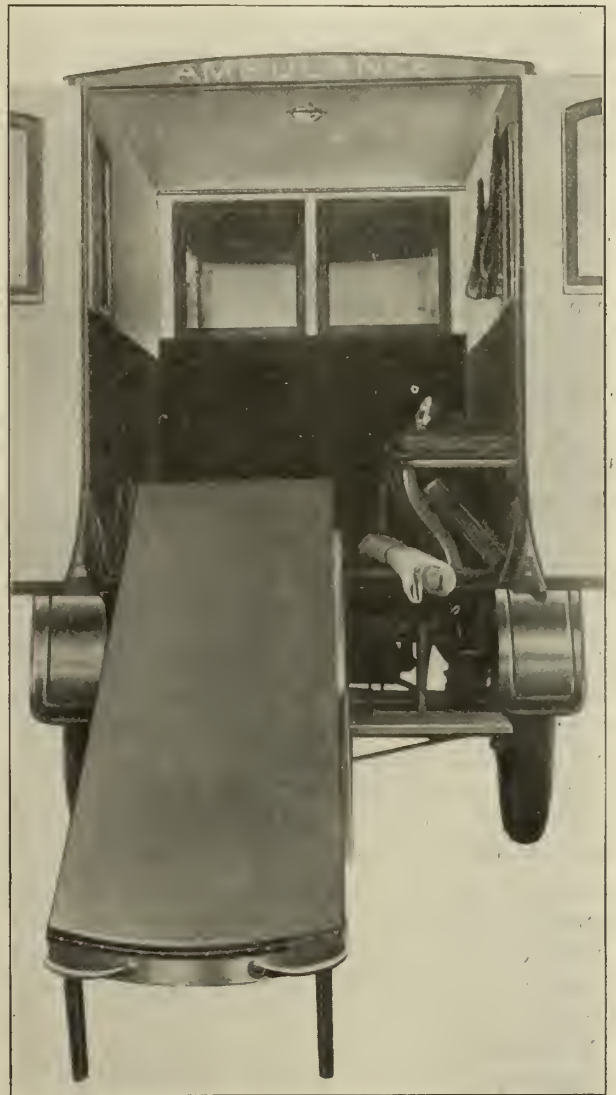

Fig. 5. Removable cot ready to receive the patient.

BELLEVUE'S EQUIPMENT.

Today the ambulance equipment at Bellevue consists of 14 horses, 1 steamer, 3 gasoline cars, and 4 electrics. In 1912 these responded to 11,700 calls. The electrics answer the emergency calls in the immediate neighborhood. Horses are held in reserve, while the steamer and gasoline cars make the longer runs in transfer work.

In the maintenance of its ambulance service, Bellevue has kept no records that permit a close analysis of operating costs. The first electric in use, however, taking first calls answered probably half the total calls that were received each day. From this it was estimated that at about half the total expense the electric did twice as much work as the horse ambulances. It was this estimated economy that led to the decision to electrify the emergency service, resulting in the installation of two additional electrics November, 1913, and a fourth car in March, 1914.

Bellevue is the parent hospital of three other institutions known collectively as Bellevue and Allied Hospitals, all controlled by one board of trustees. The other hospitals are Gouverneur, on the lower East Side; Harlem, up town, and Fordham, in the Bronx. Gouverneur and Harlem serve typical city districts—congested streets, good pavement, with short runs. The down-town institution uses two electrics and two horse vehicles. During 1912 these responded to 6,870 calls. Harlem, with one electric and three horses, answered 7,992 calls. Fordham Hospital faces different requirements; the territory served is large, practically all of the outlying sections of the Bronx Borough calling on this institution; roads are wide, with little traffic, offering opportunity for fast runs, and, as the trips are often five miles or more, the higher power and faster types of autoambulance were sent to that territory. One gasoline car and one steamer during 1912 responded to 3,768 calls.

IN QUEENS BOROUGH.

The same condition exists among the six hospitals in Queens Borough. Of the eleven ambulances in this district, eight are horse-drawn for nearby calls and three are gasoline cars for the long runs across the open sections of the still undeveloped borough. Single runs here are of a length that would incapacitate a horse for the rest of the day, and an electric would fare hardly any better. Fortunately there are not many accidents in this section, in 1912 the six hospitals responding to but 3,727 calls.

[To be continued.]

Dr. Frederic A. Washburn, administrator of the Massachusetts General Hospital, has been appointed superintendent of the Massachusetts Charitable Eye and Ear Infirmary of Boston, 225 beds, to take effect January 1, 1915. Dr. Washburn assumes his new duties in addition to his present position. The infirmary is located near the hospital. Dr. Farrar Cobb, for the past twenty years superintendent of the infirmary, resigns to give all his time to his surgical practice.

At the meeting of Pennsylvania State Graduate Nurses' Association held in Pittsburgh in November officers were elected as follows: President, Miss Susan B. Francis, of Philadelphia; first vice-president, Miss Roberta West, Philadelphia; second vice-president, Miss Katherine Dempster, Pittsburgh; secretary and treasurer, Miss Willimina Duncan, Pittsburgh; directors, Miss Ida F. Giles, of Philadelphia, and Miss Nellie MacAfee, of Pittsburgh. It was decided to hold the next convention in Philadelphia in November, 1915.

The MODERN HOSPITAL

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Contributors, subscribers, and readers will find important information on advertising page 34.

The Treatment of Mental Cases in General Hospitals.

The recent twelfth annual report of the operations of a pavilion for the care and treatment of mental cases in connection with the Albany Hospital is full of interest and instruction to other hospitals. This pavilion was established thirteen years ago in connection with the hospital at the suggestion of physicians who were interested in securing prompt treatment for mental cases, without the formality of legal proceedings at the outbreak of their disease, when the condition of the patient required his removal from home. Up to this time, and even later, there had been difficulty in procuring in the city of Albany any adequate and proper treatment of urgent cases of mental disease without legal proceedings before a court. This in many instances occasioned delay and in others produced a severe shock to the patient, who was generally in no condition to appear in court. The pavilion was established in a tentative way at first in connection with a ward in a general hospital, its capacity was small and its location was not in all respects well suited to the best care of delirious patients. Its success, however, was evident from the start, and the necessity of such provision in connection with many other municipal hospitals became equally evident. It has already had many imitators and will have many more.

Through subsequent enlargements the pavilion now affords accommodation for 33 patients—16 men and 17 women. During the past year there have been treated here 384 patients, of whom 189 were so far restored or improved as to be able to go back to their own homes. One hundred other patients, after a longer or shorter residence, were found to require other treatment, and were declared to be legally insane and were committed to institutions for the insane. Thirty-five patients under treatment died during the year. It will be seen from the above figures that during the year 49 percent of the cases admitted recovered or were improved. During the entire history of the pavilion 3,133 patients have been treated, of which 1,670, or 53 percent, have been able to return home without having recourse to institutions for the insane. The saving to the community of the work of this hospital is well shown by these figures.

It is evident from examining the statistics that cases of delirium, whether from bodily disease or from alcoholic excess or drug addiction, form the greater portion of those persons who are benefited by such hospital treatment. Cases of delirium proper generally develop among those who display mental symptoms in association with physical disease, either due to an unusual degree of toxicity in the disease itself, as in typhoid fever or pneumonia, for example, or from an extreme susceptibility of the nervous system of the individual. In these cases, owing to a disarrangement of the higher functions of the brain from toxic conditions, the patient is unable to exercise self-control, and his actions show a suspension or a perversion of the will-power. A similar mental disorder may be due also to an exhaustion of the brain cells or to the presence in the blood of some toxic element, such as the poison of alcoholism or of drug addiction. In some cases both causes operate and the proper treatment requires the elimination of the toxic agent from the system, together with a restoration of the nutrition of the brain by rest, quiet, and nutritious food.

When the pavilion was established it was anticipated that it would be used solely for the temporary care of cases of insanity until such time as they might be transferred to proper institutions. It has been found, however, year by year that a larger number of patients who have thus been sent to the institution have recovered, and do not need to go to other institutions. It has been found also that the majority of patients are admitted in a condition of more or less extreme exhaustion, and that their mental symptoms are directly due to this condition. The treatment is simple, and looks to procuring for the individual rest and quiet and a restoration of the normal

functions of the body by proper medical treatment. It is interesting to note that during the past summer steps were taken to provide similar facilities for the noncompulsory treatment of early and consequently uncertifiable mental cases in London, England. Many medical practitioners and members of Parliament have recommended that provision for this should be made in municipal hospitals, and that certification of insanity should be restricted to those cases in which, from the serious nature of the malady, it becomes absolutely necessary for the restoration of the patient and his own safety or that of the public that he be committed; and that incipient cases should have treatment in reception hospitals, observation wards in infirmaries, or wards of general or special hospitals.

It is to be hoped that a similar movement may be inaugurated in the United States, so that incipient cases of insanity, or cases of delirium which are not necessarily insane cases, may have facilities afforded for efficient treatment in municipal hospitals.

HENRY M. HURD.

Modern Sterilization.

Thirty years is a long time to look back on when we are thinking in terms of the science of bacteriology. Thirty years ago we were just beginning to realize the germ theory of disease; we had gone just far enough to appreciate the fact that a good many diseases were caused by microorganisms. We had not begun to know the life history of the various forms of microscopic life; we did not even know the particular microorganism that caused more than two or three diseases, but we suspected there were a great many more, and we began to think about terminating their inroads on the human system.

It was at this point that Mr. Frank J. Sprague designed the first dressing sterilizer, and, operating under the same general principles that guided him, sterilizers for other purposes were built shortly afterward.

At that time there was a general belief that microorganisms all required about the same degree of heat to destroy them, and in that day we had not even separated the spore-forming microorganisms from the nonspore formers, at least in so far as their life history, their physical characteristics, and resistance to destructive agents were concerned.

Mr. Sprague was told that, in order to destroy germs, he would have to develop wet heat of about 250° F., which meant to a physicist like Frank Sprague that he would have to develop a steam pressure of from 15 to 17 pounds.

He went to work on this theory and built what we know today as the dressing sterilizer. The instrument for the sterilization of dressings that we would buy tomorrow, if we wanted a new one, would be identical in principle with the instrument that Frank Sprague made. Not one single improvement in principle has been made. Conveniences have been added; some parts have been strengthened where weakness had developed in the Sprague instruments; new doors were put on, the steam connections have been somewhat elaborated, and the present instrument is a very much prettier machine than Frank Sprague made, but it is precisely the same in all essential principles.

And yet bacteriology has made some progress in thirty years. We have learned, for instance, the physical differences between the spore formers and the nonspore formers, and the death point of each under different varieties of heat. We have learned that there are three spore-forming microorganisms that are enemies of mankind and likely to cause infection—viz., the gas bacillus, anthrax, and tetanus. We have learned about most of the so-called pathogenic, or harmful, nonspore-forming microorganisms; we know that these are the streptococcus, the staphylococcus, tubercle bacillus, the diphtheria microorganism, the typhoid organism, the pyoceaneus, and the dysentery organisms. We know pretty well about the meningitis organism, and, thanks also to Flexner, are learning about the poliomyelitis organism; we strongly suspect a scarlet fever and measles organism, and organisms that cause some of the other exanthemata, and, moreover, we suspect that when these organisms are finally located, they will not differ essentially, at least in their physical resistance to destructive agents, from the other nonspore-forming microorganisms.

Now, then, is our present-day sterilization logical in view of our newer knowledge in bacteriology? Perhaps the catgut manufacturers know more about the spore-forming microorganisms from actual experience than anybody else. They are constantly dealing with tetanus in the preparation of catgut, and they tell us that the spore-forming microorganisms can be killed only by a very high heat maintained over a considerable period of time, or, better still, by the fractional method, where the process is repeated at certain intervals. I believe it is generally conceded that spores are destroyed at 300° or considerably over twenty pounds of steam pressure, maintained for half an hour or longer. If that is true, then we are not destroying spores in our fifteen pounds 250° F. that we apply in our dressing sterilizers.

I believe it is generally conceded that moist

heat at 212° maintained for a few minutes, perhaps five or ten at most, will destroy all the nonspore-forming microorganisms. If these statements are true, then we are doing not nearly enough with our sterilization to destroy spore-forming microorganisms, and we are doing far too much if we are intent only on the destruction of the nonspore formers. We might paraphrase the old maxim and say that if "'twere well 'twere done, 'twere well 'twere well done;" but in this particular case every day it is costing this country a lot of money to overdo a thing. Our sterilizers are now being made double-jacketed for drying-out purposes, and they are made to withstand a steam pressure of a good many more pounds than we ever test them under. The manufacture of these steam containers is a costly process. Manufacturers are compelled to use very high-grade materials. They must get their tensile strength right, and the assembling of their parts must be done under correct mechanical principles that are costly in the doing. In other words, in a sterilizer that now costs us, say, $400, about three-fourths of the money expended is intended to do something that we don't intend to do at all.

I doubt whether there is an eminent surgeon in this country who would ask that his sterilization provide for the destruction of spore-forming microorganisms, and his reason would be entirely logical. Every year four or five people are killed in this country by lightning while they are walking in the open, but we don't carry a lightning rod with us when we walk; quite a few people are killed on railroad trains, but we ride nevertheless; and so perhaps a spore-forming microorganism might at some time get tangled up with our dressings, but the occurrence would be so rare that it would seem that no surgeon would insist that every sterilization provide against this rare accident.

We feel perfectly safe when we boil typhoid stools and diphtheria-infected clothing for a few minutes at 212°. Why are we not safe using the same temperatures for the other organisms that have precisely the same heat-resisting properties?

The point that I wish to make is that the time has about come when some advances should be made in sterilizing apparatus. There is no doubt that we are sterilizing things properly in our operating rooms if the prescribed methods are followed, but without any question the apparatus with which to do this work is costing far more than it need cost.

Sterilizer manufacturers are entirely right in making the apparatus that they do now make and sell to hospitals, because, in a final analysis, the medical profession must say what proper sterilization is, and there is no doubt that the makers of sterilizers would be glad to cheapen their product if the medical profession would sanction it.

To my way of thinking, a cast steel, single-jacketed container can be made at very small cost that would give us wet steam practically without pressure, or with only a pound or two of pressure, that would do everything that our costly sterilizers now do.

There are, of course, some details that would need to be settled—such, for instance, as the drying-out process—but these details are entirely capable of solution.

JOHN A. HORNSBY.

Professions—Or Labor Unions?

A few days ago the members of a training school class in a New York hospital "struck," out of sympathy for somebody, and quit work. Two of the nurses who were assisting in a surgical operation left the patient in the midst of the operation, and bystanding physicians, necessarily unacquainted with the technic of the nursing department, helped to finish the operation. The patient died from a septic endocarditis. The doctors gave an interview, saying the death had not been caused by the nurses leaving their post. It is certain that the patient died from a sepsis; who knows where it came from or how much the untrained emergency assistants had to do with the sepsis?

A few days ago also—towit, on December 4—twelve interns in the Kansas City General Hospital "struck" for better food, and for two days refused to go on the wards, to dress patients, attend emergencies, or perform any of their duties. The board of trustees of the hospital emphasized their total unfitness for the duties they are called on to perform by compromising with the strikers, who went back to work at the end of two days under an agreement by which their grievances were proposed to be remedied.

To what has the medical profession come, and to what has the nursing profession come? Or, better still, is there a medical profession and a nursing profession, or are there merely new additions to the social order of labor unions?

The nurses in the New York hospital were guilty of the highest crime short of murder. Those who participated in the strike should be driven out of uniform and should be kept out.

How much more of a crime was it for men who are supposed to have arrived at the dignity of Doctor of Medicine? Words are weak when they

are called on to express the shamelessness of the action of these young men. Instead of being put back to work under a compromise agreement, there should be a criminal law to fit their case, and at the very least they should be branded by the institution in which they have proven themselves so unfit; their names should be published to the medical profession at large, and they should never be trusted again in the high calling which they have disgraced.

Oftentimes these young people have bad advisers, and are not always to blame; hence there should be a new principle of conduct, and it should be standardized, and thoroughly well understood, for interns and nurses who have a grievance while in the performance of their duties. The "strike" is no cure for grievances under such circumstances. Medicine and nursing are not labor trades, and there are other ways of curing grievances for those engaged in these two sacred professions. Unfortunately such herculean efforts were made to cover up the disgraceful New York incident that even the name of the hospital was not published, and we do not know the details, but there is no doubt that these young women were badly advised, and the people in control of the institution were not wise enough to handle a delicate situation, and a remedy ought to be applied higher up in their case.

In the Kansas City case, if there had been a competent superintendent in the hospital, the men never would have struck, and, having struck, if there had been a competent board of directors in charge, they should never have been allowed to go back to work. It is beside the question to say that the work had to be done and there was no one else to do it; that is not true. There are enough high-minded medical men in the Kansas City profession to have manned that hospital a hundred times over, and they would have been glad to do it. The trouble in Kansas City is that the sick poor are being made the victims of a renaissance of the public hospital, which the mayor several months ago turned over to the politicians.

THE MODERN HOSPITAL warned Kansas City at the time that the people should rise up in their indignation and prevent the prostitution of that hospital. Now the harvest has come, it is too bad that innocent sick people are made to suffer.

Policies in Boston City Hospital.

It has been announced that Dr. John J. Dowling, of Boston, has been appointed superintendent of the Boston City Hospital, vice Dr. John H. McCollom, retiring on account of age. Dr. Dowling graduated at Harvard Medical School in 1894, and has practiced medicine in Boston since. Those who know him say that he is an excellent physician, a clean, highly reputable man, and a scholarly gentleman.

But why an untrained administrator for the Boston City Hospital? The statement has been made repeatedly by those capable of judging that there are only two municipal hospitals in this country that are efficient and up to date, and that the Boston City Hospital is one of these. A very large part of this efficiency has been due to its superintendents, more notably to Dr. Rowe, during whose long service the institution became one of the best hospitals in this country, public or private.

Is that splendid institution, which has been a pride to Boston, an inspiration to the rest of the country, and a boon to thousands of dependent sick who have passed through its doors, to be now thrown as a feast to the politicians? No other conception is possible, else an untrained man would not be appointed its executive head, a position that requires the highest order of special training.

The people of this country are more than tolerant of politicians and their peculiar propensities. The people allow their public business to be parceled out to those who can deliver the votes, and, if the people can stand it, THE MODERN HOSPITAL can; but this prostitution of a noble hospital to the god of graft is something else. Are there no holy places, even in the eyes of the professional politicians? Cannot the poor and the sick and the distressed be guaranteed adequate skill and conscience for the cure of their diseases?

It is beside the question to plead that Dr. Dowling is an upright and a conscientious man; he is ignorant of the duties he is to be allowed to perform, and ignorance concerning the care of the sick is the highest possible crime.

It will be interesting to know whether the boasted culture and the widely heralded humanitarianism and the admitted progressiveness of Boston will permit the fine old Boston City Hospital, which all hospital people, the world over, have come to honor and revere, to become a plum in the political grab bag.

And how about its board of trustees? When Mayor Curley took office a year or so ago, one of his first acts was to call on the trustees of the Boston City Hospital to make a study of their problem to the end that they should be able to map out a program for the institution that would guide it wisely far into the future. We heard that the board went to its task with enthusiasm and a high purpose. THE MODERN HOSPITAL

complimented the board editorially on its splendid opportunity at the time.

Is the appointment of Dr. Dowling the fruit of the labors of a board that aimed so high? or, has the matter been taken out of their hands? And, if the latter is the case, what are the members going to do about it?

Dr. Hirsch's Papers on the X-ray.

We cannot too highly recommend a careful perusal of "The X-ray Laboratory," the first installment of which appears in this issue. Dr. I. Seth Hirsch has made a thorough study of equipment and methods in the best laboratories in this country and abroad. As director of the x-ray laboratory at Bellevue Hospital he has gained a wide and practical experience in the organization, methods, and routine of this most important and fast-becoming indispensable department of our modern hospitals. Thus, by exceptional training in his specialty and by wide experience in active hospital service, Dr. Hirsch is preeminently fitted to efficiently cover every angle of this subject.

The application of the x-ray, from the detection of foreign bodies and diseases of bones and joints to the examination of digestive disturbances, now leads to cures in many long-standing troubles. Cancer is diagnosed early and sometimes cured by treatment or operation. In combination with cystoscopic examination, obscure diseases of the kidneys are detected. Methods are being elaborated for the exact measurement of the heart. We may confidently hope through utilization of the x-ray in correction of gastric disorders in children to throw much light on proper methods of infant feeding.

The x-ray departments of our hospitals have already proven of the greatest value, and hold out promise of far greater usefulness for the future. Let us by all means properly maintain and expand them.

Asepsis and Antisepsis in War.

At the end of October, M. Tuffier, the distinguished surgeon of the Beaujon Hospital in Paris, made a report to the French Academy of Medicine in regard to his investigations at the battle front, which had been made at the instance of the French minister of war.

He had many things of interest to offer, mostly of interest to the medical and surgical professions, but his report contained a paragraph of very great interest to the hospitals of this country—viz., that in which he drew attention to the method of treating wounds, and his conclusions were that antisepsis had proven far more efficacious in the treatment of wounds than asepsis; another conclusion was that wounds treated by wide open drainage got well far quicker and with vastly fewer unfavorable incidents than those that were closed up, no matter how clean the field had been rendered previously.

Let not the American hospital administrator feel that there is any inconsistency in Professor Tuffier's preference for antisepsis in the treatment of these bullet and shell wounds. Invariably a wound received on the battlefield is infected in the very nature of things; the bullet or shell fragment is itself unclean, and more often than not it carries into the wound pieces of infected clothing or other foreign matter. It would be impossible to treat such a wound as clean surgery because asepsis implies merely the keeping out of infectious matter, and makes no pretense at the destruction of pathogenic or harmful microorganisms. In our hospitals it is our aim to do clean surgery—that is, to perform our operations so that no microorganisms will invade the field, and then, and then only, may we expect a wound to heal by primary union—that is, without the formation of pus.

Professor Tuffier was not talking or writing about clean hospital surgery in his report. He had reference only to wounds that were infected in the making.

Anniversary of Dr. John M. Peters.

We are beginning to make history in the hospitals of this country—history that is worth handing down, and, as in almost every other walk of life, the epochs of hospital history hinge on the personal achievements of individuals. Milestones along the hospital highway in this country are marked with the names of Rowe, Hurd, Ludlam, Fisher, and the achievements and character of these men are setting high-water marks for the men of a younger generation to strive for.

On the evening of October 28 a dinner was given at the Turk's Head Club in Providence, R. I., by two hundred physicians and personal friends, to Dr. John M. Peters, on the twenty-fifth anniversary of his superintendency of the Rhode Island General Hospital. On that evening Dr. Peters' name was officially added to that splendid list of those who have marked out for us the high lights in hospital history, and have brought to us the present high character of our institutions for the care of the sick.

Dr. Peters was surrounded by those who knew him best and longest, and many of them spoke beautifully of what his service to the Rhode Island Hospital had meant, not only to his own institution, but to the service of the sick everywhere. Dr. Howard, superintendent of the Peter

Bent Brigham Hospital; Dr. Washburn, superintendent of the Massachusetts General Hospital; Dr. G. Alder Blumer, superintendent of Butler Hospital; Dr. C. Irving Fisher, Dr. Robert L. Wilson, Mr. Robert I. Gammell, were some of the speakers of the evening. A beautiful gold watch and chain, monogrammed and appropriately inscribed, was presented to Dr. Peters by Dr. Jacob C. Rutherford, spokesman for the assembled guests.

DR. JOHN M. PETERS.

It was a gala evening, and one wonders if it was not worth the twenty-five years of unremitting work that Dr. Peters has given to the service of the sick to receive the appreciation of the splendid men who met to do him honor.

All Dr. Peters' professional life has been given to the Rhode Island General Hospital. Immediately on his graduation from Harvard Medical School in 1887, he entered the hospital as an intern, and two years later became its superintendent on the retirement of Dr. Woodbury. During the first year the hospital passed through its doors 971 patients; after twenty-five years the institution had so grown that last year the total number of patients was 7,625. The average stay in the hospital twenty-five years ago was thirty-two days; now it is less than half that number, which is in no small degree a test of efficiency.

Anniversary celebrations have always a note of pathos and a little sadness, mingled with the pleasures of the occasion. Fortunately Dr. Peters is yet a young man, and let us hope that for many years longer his strength and courage will be spared, that he may add to the debt the world owes him for the highest service that man can render to man.

The Retirement of Frank M. Elliot.

Hospital trustees come and go. Most of them accept the honors of office with becoming grace and nonchalance, not to say indifference. They sometimes attend board meetings of their hospitals, and a great majority of them end their service there. The times are changing in this respect, and hospital trusteeship is now becoming a serious business with conscientious men and women. But it has not always been so.

FRANK M. ELLIOT.

It is refreshing, therefore, to be privileged to tell a little story of one man's hospital service and its fruits. Twenty years ago Frank M. Elliot, then one of the younger leading business men of Evanston, Ill., became a trustee of the Evanston

Hospital, which occupied two rooms over a store in the business part of the then small town. A year after his election as a trustee he was made president. Since that time more than 12,000 patients have passed through the hospital, there is a permanent endowment fund of nearly $750,000, and there is now a beautiful group of buildings with a total capacity of 200 beds. Last year the total number of patients was nearly 2,000.

Mr. Elliot retires from the presidency and from the board of the hospital because the growing cares of his office were becoming too great with his other many duties and responsibilities. On his retirement the board of trustees passed the following resolutions, of which any man must be proud:

The board of directors of the Evanston Hospital has issued the following resolutions regretting the resignation of Mr. Frank M. Elliot, who served as president of the board for twenty years:

Whereas, for more than twenty years Frank M. Elliot has been active as a director of the Evanston Hospital, and for the last nineteen years has been its president; and,

Whereas, under his wise and careful guidance the hospital has prospered and grown in efficiency and capacity from a 2-bed emergency hospital in a rented house to its present capacity to care for 150 patients, having a plant costing nearly $500,000, and with an endowment of nearly $800,000; and,

Whereas, during his terms of office the community at large, by reason of the hospital, has reaped a constantly increasing harvest of the most expert and scientific medical, surgical, and nursing care, given freely and unstintedly to the needy; therefore, be it

Resolved, that the association hereby express its keenest regret for the necessity that prompted his withdrawal from all active part in this work, and gives voice to the deep and full sense of its appreciation of and thankfulness for the years of constant and sustained care he has given to this work, which has resulted in our present attainments; for his ability and personality; for the wisdom and energy he has given; for the thought he has lavished; for the broad, lasting foundations he has laid; for the precedents he has made—and all these only in a measure express the good he has done; and be it further

Resolved, that this expression be spread upon the minutes of the association.

FRANK H. ARMSTRONG,
Chairman of Committee of the Board of Directors.

THE MODERN HOSPITAL is delighted to pay its modest tribute to a man who has been a shining example of the ideal hospital trustee. He has given his time, his energy, his money, and calm, resolute, conscientious service and his unusual business acumen to his institution. We commend his example to trustees everywhere.

A quarter of a million dollars for the erection of a hospital for adult male convalescents on the Parental School estate in West Roxbury, Mass., has been provided for in the will of a wealthy Bostonian of advanced years, whose name has not been made public. The bequest was announced by Mayor Curley, of Boston.

ENTERTAINMENT IN A HOSPITAL.

Sermons on Death Not Conducive to Convalescence—Different Kind Tried With Success.

Some time ago the superintendent of the Grand Rapids (Mich.) municipal sanatorium went to the mayor of Grand Rapids with a statement that she needed something to liven up the place and the patients. They had been having religious services each week, consisting too often of the singing of the staid old hymns and a sermon on preparation for death, but the character of these services was depressing rather than such as to give the patients new interest in life and courage to keep up the fight, and the result was that after each service the superintendent found herself with a lot of weeping, discouraged patients on her hands. She felt that they needed something different. The mayor agreed with her, sought out a certain minister, and told him the superintendent's troubles. The minister at once volunteered to make an effort to put on an entertainment with some life in it. For the occasion the hospital was decorated with flowers, the park board supplying a vast display. The vested choir of the minister's church sang lively, cheering songs. There were recitations and instrumental music, and some stirring talks. The entertainers themselves were the embodiment of good cheer. The patients enjoyed every minute of the program, and it had a wholesome effect on the entire institution. The innovation was so successful that this sort of diversion is to become a permanent thing.

Value of Statistics.

Dr. Frederick L. Hoffman, in an address before the National Organization for Public Health Nursing, gave as his opinion that every hospital as well as every visiting-nurse association should consider itself accountable to the committee for work with which it is charged. He notes as an exception to his criticism of hospital reports the Johns Hopkins Hospital, of Baltimore, than which no institution in the world gives more intelligent publicity to the general facts of its experience, the experience data being intelligently correlated to the population statistics of its community—chiefly, of course, to the four elements of white males, white females, colored males, and colored females; that the varying distribution of these four elements considerably affects the experience of any institution operating in a community with large negro population. The practical value of such correlation data is brought out by the statement that, in proportion to population, the admission rates to Johns Hopkins Hospital were 80 per 10,000 for white males, 70 for white females, 100 for colored males, and 135 for colored females. The startling fact disclosed by this analysis is that, in proportion to population, the admission rate for colored women to the Johns Hopkins Hospital is twice the admission rate for white women.

Recent investigations prove conclusively that cancer of the uterus is more common among colored women than among white women, and the experience data of the institution referred to are, therefore, of practical value in the study of an important phase of the race problem. The doctor adds that there are no convincing reasons why every other large hospital in this country should not publish annually the results of its experience in equally useful and convincing form.

The Home for Destitute Crippled Children and the Mary Thompson Hospital at Chicago will each receive $100,000 through the will of the late Alexander A. McKay.

STATUS AND PROBLEMS OF OUT-PATIENT WORK IN 1914.[1]

Dispensaries Growing Rapidly in Numbers, But Improving Slowly in Standards of Service—Questionnaire Reveals Ignorance as to Results—Facts and Funds Needed For Future—Some Interesting Findings.

BY MR. MICHAEL M. DAVIS, JR., CHAIRMAN, BOSTON; DR. A. R. WARNER, CLEVELAND; DR. JOSEPH B. HOWLAND, BOSTON; DR. WILLIS G. NEALLY, BROOKLYN; DR. RALPH B. SEEM, BALTIMORE.

The year 1914 may be remarked by those interested in dispensaries and out-patient departments because of the appearance of a United States census report on the subject. As the report rendered by this committee last year foreshadowed, the list of institutions published by the census bureau is incomplete, but the report furnishes a working basis, from which we see that a very remarkable development has taken place in recent years.

There exists today in the United States between 700 and 750 dispensaries and out-patient departments established for charitable work among the sick. Without going into the details of the manner in which the following estimates are made on the basis of the census report and other information, this summary may be presented:

General dispensaries	400
Dispensaries for tuberculosis only	300
Dispensaries for other special diseases, chiefly eye, ear, nose, and throat, gynecological, etc	60
Total	760

Were we to add to this a number of clinics established solely for preventive work among babies and not treating the sick, we should have a total of nearly 900. In addition to these are a number of school clinics, chiefly for dental work; a few private out-patient dispensaries, charging high fees and doing high-grade work; and, finally, in some cities there are commercial dispensaries, not always on an ethical basis.

Putting the preventive, school, and commercial clinics aside, the striking fact is that the number of dispensaries is seven times as great today as it was in 1900. There were three dispensaries established in the United States in the eighteenth century, but the number increased very slowly until toward the close of the nineteenth. The rapid growth has been since the beginning of the twentieth.

The dispensaries are widely distributed. All but ten states in the Union have at least one dispensary. Of the 400 general dispensaries, approximately 75 percent are in cities of over 100,000, 15 percent in cities of between 20,000 and 100,000, and 10 percent in towns of less than 20,000. The establishment of a number of dispensaries in the smaller communities is one of the most recent and interesting features of this movement.

Admittedly the dispensary has been a relatively neglected part of organized medical work, but it has clearly grown too much to stay so. In 1900 there were about 100 dispensaries in the United States, 80 to 90 of these being general dispensaries. The number increased, year by year, with considerable rapidity, so that in 1904 the census bureau, which then made a survey, reported 156 institutions, the actual number, allowing for probable omissions, being toward 200. Most of these, again, were general dispensaries, the remainder being for diseases of special organs, chiefly eye, ear, nose, and throat. The growth of general dispensaries has continued, as may be seen from the preceding figures, the number of these having multiplied four times since 1900 and two and a half times since 1904.

One of the reasons for this growth has undoubtedly been the increasing demand of medical men for clinical material, both for experience and for teaching purposes. Another reason is the growing demand on the part of the public, particularly the part of the public receiving low wages, which, in the large cities, has been put under heavier and heavier pressure by the rising cost of living. A third and very important reason is the growing interest in public health, which has taken up the dispensary as an agent in its campaign. This has undoubtedly played some part in the development of dispensaries treating general diseases. It has been the chief cause leading to the establishment of a very large number of out-patient clinics treating special diseases, particularly tuberculosis. Today the antituberculosis movement is well organized, with branches in almost every state in the Union, besides a national association, and it is well financed.

The establishment of dispensaries has been part of the antituberculosis campaign. In 1905 there were 18 tuberculosis clinics in the United States, most of which were departments of general dispensaries. On May 1, 1913, the tuberculosis directory, issued by the National Association for the Study and Prevention of Tuberculosis, recorded 293 dispensaries especially for tuberculosis, and nearly 100 additional tuberculosis clinics which were part of general dispensaries or out-patient departments. Thus, in less than ten years 300 tuberculosis clinics have been established, and every year now sees their extension in cities over which the antituberculosis movement is sweeping.

The campaign against infant mortality has similarly taken up the dispensary clinic as an aid, and so have the more recently initiated campaigns, all nationally organized, for the promotion of mental hygiene, sex hygiene, and for the study and prevention of cancer.

Business enterprises—including railroad, mining, and industrial corporations—are establishing dispensaries for the treatment of employees and the members of their families. These tendencies of the present-day public health movement are in their infancy. If they develop as they are likely to do, they are bound to enlarge greatly the extent and character of dispensary work.

Finally, the demand for hospital efficiency has caused the physicians and hospital administrators of a number of hospitals to see that the out-patient department can be of great assistance to the wards in the following up of discharged patients and in other relations to the hospital service. It is more and more recognized that a good out-patient department is an asset to the hospital itself, as well as a benefit to large sections of the community.

We mention these points to illustrate our belief that the very rapid development of dispensary work in recent years is the result of a real demand, coming from many sources and widespread over the country, and that the dispensary work, therefore, is becoming too important to remain solely the "poor relation" of the hospital.

It will be asked whether the growth in dispensaries has not gone too fast and too far. There is no doubt that the increase in numbers and in size in dispensaries and out-patient departments has, on the whole, outstripped the development in administration and clinical technic, and also financial support. We know that the members of this association who are connected with medical institutions maintaining dispensaries or out-patient departments are sincerely desirous of making any practicable improvements in their out-patient service, and also that many

[1]Report of Committee on Out-Patient Service, read at the sixteenth annual conference of the American Hospital Association, St. Paul, August 25-28, 1914.

members connected with hospitals which have considered or are considering the establishment of out-patient departments will welcome suggestions and discussion concerning the best method.

With the limited means at its command, the committee has sought to ascertain facts about the present organization and practice of dispensaries and out-patient departments, and we present some of the facts ascertained and some recommendations based thereon, in the spirit of presenting suggestions rather than criticisms, and with the recognition that the whole subject of out-patient service is as yet in such a formative state that no committee is entitled to lay down final principles.

What follows relates almost entirely to general dispensaries and out-patient departments. A question blank was sent out to about 360 whose addresses were obtained from the census report and other lists, and the committee was much gratified to receive 185 replies, of which over 163 came in time, or were sufficiently filled out, to be capable of compilation and tabulation. The tuberculosis dispensaries have been the subject of a special inquiry in cooperation with the National Association for the Study and Prevention of Tuberculosis, but the returns from the questionnaire thus sent out have not yet fully come in.

Of the 400 general dispensaries in the country, about 250, or 62.5 percent, are out-patient departments of hospitals, and the remaining 150, or 37.5 percent, are dispensaries independent of hospitals. Of the 160 institutions that replied to the questionnaire, 118 were out-patient departments and 43 were independent dispensaries. The following table shows the distribution as to size:

	Out-Patient Depts.	Dispensaries.
Receiving less than 2,500 visits a year...	15	5
Receiving 2,500 to 10,000 visits a year.	29	14
Receiving 10,000 to 30,000 visits a year.	36	8
Receiving 30,000 to 60,000 visits a year.	14	4
Receiving 60,000 to 100,000 visits a year.	14	0
Receiving over 100,000 visits a year.....	4	5
Number of visits not reported, but returns tabulated in other respects.....	6	7
	118	43

The first matter to which we may look for information is organization. Dispensaries, dealing as they do with large numbers of people over whom the same control cannot be exerted as over persons confined within a hospital, must be organized with especial care if definite and satisfactory results are to be expected.

The first requirement of organization is a head. On this point, in answer to the question as to the person in authority, 21 out of 118 out-patient departments made no answer. In 24 it is reported that the clinical physicians exercised all the executive authority as well as the medical responsibility. In 11 a clerk, orderly, janitor, or other person, to whom of course no real executive authority is given, is stated "to decide admissions and direct employees." In 11 other cases—mostly very small out-patient departments attached to small hospitals—the superintendent himself or herself is said to take personal direction of the out-patient work. In 44 cases the superintendent delegates a representative to "decide admissions and direct employees." In 5 of these cases this representative changes frequently, and in a considerable proportion of the remaining 39 the representative of the superintendent is a house officer or a nurse, who has other duties, and at no time is in a position of real responsibility for more than the supervision of mere daily routine. The number of hospitals which have placed in charge of their out-patient departments a trained officer, lay or medical, with relative permanence of tenure and real authority, may be counted on the fingers of two hands. An out-patient department receiving 100 or 500 visits from patients daily, and having 5, 10, or 15 medical and surgical departments, each with its staff, needs somebody to supervise its routine, and also needs a head to think about its problems just as a hospital does. Are we likely to have satisfactory routine, much less real development in meeting problems, if such an institution has no head? The superintendent of the hospital must either be relieved of enough other duties to enable him to give some real attention to the out-patient department, or he must have a permanent, responsible, and trained representative.

Among the dispensaries not connected with hospitals the same is true, for in only a few cases is the titular head an official with special training. Thus, out of 18 cases in which the salary paid to the head was stated, 15 reported $1,000 or less. Of course, some of these dispensaries are small places, but of 8 receiving over 10,000 visits a year 7 reported that their head was paid a salary of not over $1,000.

As a necessary consequence of inadequate organization, dispensaries and out-patient departments have loosely administered admission systems; the routine of transfer of patients for medical consultation between different clinical departments is not worked out; record systems are lax; and, perhaps more important than all, the problems and needs of the dispensary are thought out by no one and are not adequately presented to the responsible authorities of the hospital, in whose hands lie funds, or who must ask the public for funds. This they will not do unless the out-patient department's real needs are properly kept before them.

This leads naturally to the subject of cost. Here our great difficulty has been to ascertain facts. The dispensaries maintained independently from hospitals can, as a rule, state their expenses in an annual report or in the returns made on our question blanks. In the cases of the out-patient departments, 71 out of 115 answering the question did not keep the cost of the out-patient department at all separate from that of the hospital, so that they could not state the out-patient cost; 5 stated the cost, but could not itemize it at all; 31 kept the out-patient cost separate to a certain extent, and were able to itemize it partly; and 8 institutions actually returned a carefully itemized account of the cost of the out-patient service separate from that of the hospital.

Of the 18 largest out-patient departments, all receiving 60,000 visits a year or more, only 3 rendered fully itemized cost statements. Under these circumstances any attempt to state an average figure for the cost of dispensary work must be undertaken with great caution. The average cost per visit of a patient seems to be the best unit to employ, but what is this cost? Among the 44 out-patient departments making a return, the stated cost varies from 6 cents to 68 cents per visit. Cost figures as absurdly low as 6 or 10 cents a visit simply mean that the expenses incurred by the out-patient department have not been charged to it. On the other hand, the highest costs are found chiefly among institutions of unusual standing, although several out-patient departments esteemed the country over for their medical work report costs of between 25 cents and 30 cents per visit. The facts that have been collected do not warrant us in making any statement as to what the average cost per visit of an out-patient department should be. It is apparently true that a cost per visit of less than 20 cents, or perhaps 25 cents, indicates either an undesirable standard of service or an inadequate system of cost accounting. On the other hand, a cost of 50

cents or 60 cents per visit cannot be said to be unjustifiably high.

The most important conclusion to be drawn is this: that if an out-patient department is worth maintaining, its cost is worth watching. If the work of out-patient departments is to be more important in the future than it has been in the past, proper cost accounting for out-patient departments is more important than it has been.

In the case of dispensaries which are independent of any hospital, we are not troubled by a system of accounting which charges too little to the dispensary work. All the expenses of the institution are in one basket, although the basket sometimes seems very small for the bulk it is supposed to carry.

Thirty dispensaries report the number of visits paid and the expenses, and the cost per visit, ascertained by division, varies from 10 cents to 76 cents.[1]

How is it possible for one institution to get along with a cost per visit of 10 or 15 cents, while another institution, of approximately the same size, spends on the average visit of a patient three times as much? Part of the explanation lies in difference of equipment and other matters involving medical and administrative standards. Probably the chief reason for these low costs is overcrowding—too many patients are received in proportion to the facilities.[2]

The committee desires to bring prominently before the minds of the members of the association the fact that the cost per visit of out-patient work, while a useful unit, depends on two factors—the amount of money expended and the number of visits paid by patients. If too little money is spent, a proper standard of clinical work cannot be maintained. On the other hand, with a given plant and a given amount of medical service, if too many patients are admitted in proportion to these facilities, the standard of work must, again, fall below a proper level. Either the numbers should be limited in proportion to the facilities, or the facilities should be increased to enable larger numbers of patients to receive adequate medical care. Here, as elsewhere, we need standards, and, while the cost per visit is not an absolute standard, it is useful and well worth the little trouble or careful accounting which it requires.

Another important element in out-patient service is facilities for laboratory and x-ray work. The responses to the questions of the committee have been full on this point, and it is apparently encouraging to read the following figures. They show the percentage, out of about 160 institutions which answered the questions, in which certain laboratory facilities existed, according to the responses:

Facilities for urine examinations	89 percent
Facilities for blood counts	86 percent
Facilities for sputum examinations	84 percent
Facilities for bacteriological examination of throat smears	83 percent
Facilities for bacteriological examination of vaginal smears	85 percent
Facilities for Wassermann tests	67 percent
Facilities for x-rays	71 percent

[1]Two institutions report higher costs—one of about 90 cents, the other of $3.75 per visit. In both of these cases, however, the organizations are carrying on other activities, not directly connected with the dispensary work, but not separable according to the returns made.

[2]We might consider two large dispensaries—one of which reports a cost per visit of 26 cents, the other of 15 cents. Both these dispensaries, however, give salaries to their medical staff, so they cannot be compared with the majority of dispensaries which do not pay medical salaries. Deducting the amount paid in medical salaries, the cost per visit of these two institutions reduces, respectively, to 18 cents and 7 cents, these being among the very largest dispensaries, separate from hospitals, which exist in the United States. Further comparison shows that the difference between 18 cents and 7 cents is largely due to the fact that one of the institutions has a social service department and the other has not, the department adding several thousand dollars annually to the salary budget. Other detailed comparisons could be made.

The physicians on the medical staffs of these institutions were reported as having access to these facilities in a very large proportion of cases. The situation is not so encouraging, however, when the question is asked as to the extent to which these facilities are made use of. Questions on this point were included in our investigation last year. Seventy-five institutions—and these included very representative ones—answered the question, "Is the examination of urine a clinical routine in your medical clinics?" Forty-four percent said that in their medical clinics urine was examined "sometimes;" 35 percent answered that it was not done at all, and only 21 percent said that it was a routine. The proportion in which these laboratory facilities are made use of are smaller in the cases of the other tests, the urine test being the most favorable.

Thus, in the matter of laboratory service, it would appear from the returns that a large majority of the institutions report that, while they have facilities for laboratory examinations, these facilities are not taken advantage of. Once more it is a question of clinical standards. Are we to be satisfied in out-patient service with medical practice which has a laboratory within its reach, but does not use it?

It may fairly be answered that omission of the use of the laboratory may be due to the practical inability of the institution to furnish sufficient routine assistants to do all the work which the medical men would like to call for. This is undoubtedly true in a great many cases. An accepted standard, below which out-patient service cannot fall without incurring general criticism, will be the best possible backing, both for medical men and for administrators, in securing the facilities which many out-patient clinics obviously need.

The reports from the dispensaries and out-patient departments in the matter of certain other facilities may be mentioned. Sixty-eight out of 149 institutions had social service, 68 reported no social service departments, and 13 did not answer this question. In 30 out of 68 affirmative answers the social service department included only one worker. A real beginning has been made here during recent years, as out of 17 out-patient departments and dispensaries of the larger size (60,000 visits or more a year) only 1 reported no social service department. In 4 of these cases, however, the "department" meant only one worker, struggling with the social problems of 15,000 or 20,000 patients annually.

Keeping records of the number of patients and visits is an elementary, but important, matter. Fifteen percent of the 160 odd institutions answering the questionnaire did not report either the number of patients or the number of visits, or both, the reason in the majority of cases being that their records did not show the absent figure.

It is further evident that there is no agreement as to the way of keeping these statistics. Some institutions report new patients and old patients, but not the total of visits. This is, however, easily obtained by taking together new and old patients. Whether patients are really new patients, or whether a patient who is treated in three different clinics counts as three, can rarely be told from the returns in our questionnaire or from the annual reports of the institutions. Uniformity in this very simple matter would undoubtedly be of assistance.

One of the questions sent out by the committee was, "Are you satisfied with the results of medical treatment afforded patients in your dispensary?" Eighty-three, or 52 percent, out of 163 institutions answered that they were satisfied; 18, or 11 percent, said "fairly satisfied;"

32, or 19 percent, did not answer the question; and 27, or 16 percent, said they were not satisfied.

The supplementary question was then asked, "What percent of your patients paid only one visit to a clinic and did not return, although they apparently needed more treatment?" Only 21 institutions answered this question at all, the majority said that they did not know, and a considerable proportion ignored the question entirely. It is interesting to find that, of the 21 responses to this question, 16 were from institutions reporting that they were satisfied with the results of the medical treatment afforded patients. The percentage of patients paying only one visit, although they needed to come back, is 10 percent or less in all but two of these 16 cases.

The committee is compelled to conclude from these responses either that the question was not understood, or that only hasty estimates were made of the percentage of patients paying only one visit. There is no doubt in our minds that the proportion of patients who visit out-patient clinics once and do not return for treatment, even though further treatment is needed, is usually large, and is one of the most serious elements of dispensary waste or inefficiency. Wherever this percentage has actually been tested, it has been found to be much larger than 10 percent. Actual tests have been made in a number of clinics—at the Massachusetts General Hospital, the Johns Hopkins Hospital, the Lakeside Hospital, the Governeur Hospital Out-patient Department, the Maverick Dispensary, the Boston Dispensary, and doubtless elsewhere—and the percentages of patients paying one visit have varied in different institutions and different clinics from 30 percent to 75 percent. It was especially interesting to remark that of the 27 institutions which stated that they were not satisfied with their dispensary work, 5 gave an estimate of the proportion of patients paying only one visit, and 3 out of the 5 estimated it as more than 10 percent.

We believe that it would be profitable for a number of institutions to investigate the proportion of patients paying only one visit. The percentage would, of course, vary widely in different medical and surgical clinics in the same institution, according to the nature of the different diseases treated, but an examination of these percentages, and consideration of what they indicate, would be found of much value.

On the whole, we believe that the large proportion of answers expressing satisfaction with the results of current work indicate that the problems of the work itself have not been fully thought out. Judgment of results attained cannot be expected to be accurate unless we have reasonably definite standards of service.

In surveying the present-day field of dispensary work, the contrast between different types of out-patient institutions is worthy of much consideration. There is obviously a very wide difference between an out-patient department of a hospital in a town of 15,000 inhabitants, receiving 500 or 600 patients a year, and an out-patient department in a large city attached to a hospital of 500 beds, and receiving annually 100,000 visits from 25,000 patients or so.

The dispensary maintained separately from any hospital presents problems differing in some degree from those of the out-patient department; and, again, a dispensary for special diseases (orthopedic, eye, ear, gynecological, tubercular) has problems of equipment and administration peculiar to itself. The difference between types of dispensaries is just as wide, both qualitatively and quantitatively, as between types of hospitals. Certain general problems arise in all, and certain general principles or standards are doubtless applicable to all, but each type needs to be studied also from closer range. This your committee has not been able to do during the past year. The means at the command of this committee has not enabled it to undertake detailed study. There is no doubt that the smaller dispensaries and out-patient departments in communities of moderate size are growing in number and importance, and will develop rapidly. The dispensaries for various special diseases will also. This year it has not been practicable to go further than to outline certain general recommendations which we think should apply as minimum standards to most dispensaries, and certainly to all the larger institutions:

1. Every dispensary should have a central authority in control, to which all clinical departments should be responsible in administrative matters. The medical men in the several departments should have responsibility for the diagnosis and treatment of their individual patients.

2. Every dispensary should employ at least one salaried person, on full time, for the clerical and statistical work of the institution. This person may well be called "registrar."

3. Statistics.—Every dispensary should record the following statistics: New patients (for each clinical department); total visits paid by new and old patients together, for each clinical department and for the dispensary as a whole; the new patients should be divided into males and females, and of these the number of children should be noted; the dispensary should state the age below which patients are considered children, as this age varies in different institutions. Classifying patients according to "white" or "colored" is not considered important by the committee, except in certain portions of the country, where conditions may make this worth while.

4. Every dispensary should have a card index of its patients, filed alphabetically, each card containing at least name, address, and age as identifying information. This card index should be for all clinics together, and should be kept in a central place, preferably in conjunction with the admission desk.

5. Every dispensary should have an isolation room or booth, in connection with the admission hall, for the immediate temporary isolation of patients suspected of having contagious disease.

6. Every dispensary, in its clinics for medical diseases, should have a general physical examination for all patients as part of its routine.

7. The members of the medical staff of a dispensary should have laboratory facilities for at least the following: urine tests, blood counts, the simpler bacteriological determinations—especially sputum examinations and throat cultures—Wassermann tests.

8. Facilities for cystoscopic work should be provided in genitourinary and gynecological clinics.

9. Facilities for x-ray work are essential.

10. At all examinations of females, when exposure of the body is necessary, a woman attendant should be in the clinic.

11. Every dispensary should have some organized social service work.

12. Every hospital maintaining an out-patient department should keep the accounts of the out-patient department separate, so that its cost can be accurately stated.

13. Fee system.—A system of fees paid by patients at their various visits, for medicines and for special treatments, is desirable, not only as a financial measure, but

because of its reaction on the patients themselves and because of its stimulus to good administration.

14. Every dispensary should have, in some central place, a registry book in which the members of the medical staff are to record, at each session of their clinics, their names, the hour of their arrival, and the hour of their departure.

It is obvious that these recommendations do not touch a number of very important topics in dispensary work. To some institutions they will appear elementary, but the facts in the hands of the committee show that in most institutions they are needed.

A few special topics of particular interest to those concerned with large dispensaries have been selected by the members of this committee for the reports which will be printed as appendices to this general report. The members of the committee signing these reports take the individual responsibility therefor. The topics of these reports are: Medical Organization of an Out-patient Department, Dr. Howland; Medical Teaching in a Dispensary, Dr. Seem; Construction, Dr. Neally; Social Service, Admission, and Fee Systems, Dr. Warner; Forms and Suggestions for Keeping Records of Attendance at Dispensaries and for Cost Accounting, Mr. Davis.

It may be said that the committee has nowhere referred to a topic which has probably been more discussed than any other—namely, the "abuse" of dispensaries by "persons who are able to pay private physicians." The committee is aware that this subject is a real issue in some dispensaries and in some communities. It is our feeling, however, that so much discussion has taken place on the subject of dispensary "abuse," and so little on the subject of dispensary efficiency, that it is well at this time to even up the balance. Doubtless the subject of dispensary "abuse" will come up among other topics at the Round Table, which is to be devoted to out-patient work, but we have felt it best to confine this report entirely to the positive side of dispensary administration, and to omit that vexed and magnified question of whom and how the dispensary should eliminate.

All the members of this committee are conscious that the field of dispensary work is a large one, and that but small beginnings have yet been made. What is the next step? More detailed and intensive study. The different types of institutions, large and small, connected with hospitals and separate from hospitals, treating one class or another class of diseases, must be studied in some measure separately, and information as to methods and standards made accessible in detail to dispensary physicians and managers. We think that, in view of the rapid growth of dispensaries and their general state of loose and unstandardized administration, continued study on the part of the American Hospital Association would be of service to its members. We therefore propose the following:

1. That the Committee on Out-patient Work be continued and authorized to proceed with further study of dispensary work, and to secure such cooperation and funds as may be necessary to carry on its investigations.

2. That the committee be enlarged to seven members instead of five, as at present.

3. That an appropriation of $100 be made by the association to meet the ordinary expenses of the committee for meetings, postage, etc.

There can be little doubt that the advance of preventive medicine, and its practical application by Federal, state, and municipal health bodies, will proceed rapidly during the coming years, and that this is bound to modify profoundly the conditions of medical service, both in private practice and in medical institutions. Workingmen's compensation, sickness insurance, preventive work such as that begun by the Life Extension Institute, the employment of expert medical service by large industrial establishments for the benefit of their employees—these are some of the other factors at work in the same direction. The out-patient clinic is likely to play an important part in this development, not only in the treatment of the sick, but in the growing applications of preventive medicine. It is clearly necessary that out-patient service be improved and put generally on a high medical and administrative standard. It is clearly the responsibility of such a body as the American Hospital Association to take an active part in this improvement.

In his address as president of the American Medical Association, at the Atlantic City meeting last June, Dr. Victor C. Vaughan said:

"Preventive medicine measures its successes by the number of lives saved, and the 20,000 a year which have been saved from death by tuberculosis during the past ten years is no small triumph. In the last century the average of human life has been increased fifteen years, and this increase could be duplicated in the next twenty years if the facts we now possess were effectively employed. . . . It must be admitted that, in the crusade for the restriction of tuberculosis, many physicians have manifested but little interest. . . . With advancing knowledge among the masses, these professional fossils will be correctly labeled and properly shelved in the local museums of antiquities."

Let it not be said that the physicians and the administrators of medical institutions are to be behindhand in developing to proper standards a section of their work which is growing with remarkable rapidity in response to an apparently real and augmenting public demand.

SUMMARY.

1. Dispensary work has developed very rapidly in the United States during recent years, and has now reached so large a scale as to be of general importance. It has spread widely over the country and into more and more varied fields of medical and of public health service.

2. There is an indication that this development will continue.

3. It is becoming apparent that the out-patient department is not only a feeder for hospital wards, but a positive force in contributing to the efficiency and economy of hospital service.

4. The growth in number and size of dispensaries and out-patient departments has taken place without a corresponding general advance in administration or standards of service.

5. The physicians and administrators of most dispensaries and hospitals have given little real attention to the out-patient service. A relatively small number have thus far waked up to the medical and social importance of out-patient work, and have undertaken seriously to place it on a proper standard.

6. Those who have not yet waked up to the importance of out-patient service need to be aroused—those who have waked up need to be provided with ammunition.

7. The ammunition consists of (a) facts and (b) funds.

Improved standards of out-patient service must wait on facts showing present conditions in detail; and then, through correspondence, reports, and publications, different institutions, in all sections of the country, may mutually profit by exchange of experience.

Funds will wait on facts. The greatest obstacle felt by those who are now endeavoring to advance out-patient service is the lack of accepted standards, which makes it possible for conditions to prevail in out-patient clinics

which would not be tolerated in other branches of medical work. Standards of service, based on facts showing what is best in existing services, will be the effective lever with which to secure funds for needed improvements.

ARTIFICIAL ILLUMINATION IN HOSPITALS.

Discussion of Mr. Meyer J. Sturm's Paper on Artificial Illumination in Hospitals, as Read Before the American Hospital Association at St. Paul, Minn., August 28, 1914.

BY OLIVER H. BARTINE, SUPERINTENDENT NEW YORK SOCIETY FOR THE RELIEF OF THE RUPTURED AND CRIPPLED.

Mr. Sturm is to be congratulated on the care and thoroughness with which the subject of Artificial Illumination in Hospitals[1] is presented in his paper. The paper gives evidence of careful study and broad experience, and offers ample food for thought and a basis for a broad discussion.

The author well points out the very great difference of opinion and practice among those interested in hospital work, applied not only to other branches of the construction and equipment of hospitals, but particularly to the matter of illumination and especially the matter of fixtures used for this purpose.

While sympathizing with the author's belief in the desirability of standardization of hospital illumination equipment, the realization of such a hope would seem to be remote. Hospitals are built for a variety of purposes, demanding special treatment for each, as the patient demands individual attention and special treatment. The various superintendents, doctors, visiting physicians, trustees, donors, architects, and engineers interested in hospital construction have individual ideas which are imprinted on the equipment of the hospital. These two facts inevitably work together to produce individual treatment in every hospital. It is very doubtful if an agreement of any standard form of lighting equipment could be reached.

Most hospital buildings are built with a limited amount of money, which makes necessary a sacrificing of the ideal to that attainable.

A great deal can, however, be done toward unifying the practices existing in hospital illumination and toward raising the standard of equipment used, and also toward eliminating much of the undesirable equipment which has been used, especially that which is particularly of a commercial character, with little regard to the specific needs of individual cases. In this connection the author's point that the architect should be given a voice in the councils of those endeavoring to approach a standard practice is admirably taken. This, however, should include the consulting engineers, particularly those who make a specialty of such work.

The paper under discussion goes quite extensively into the problems of illumination, brightness, ophthalmology, physiology, psychology, architecture, and engineering as applied to this problem. The information given in connection with these problems will prove of interest and help to all those engaged in this work.

Especially the physiological and psychological problems relating to illumination are but little understood at this time. A thorough solution and a full understanding of these problems will require a long and thorough investigation, based on a large number of hospitals and patients as subjects, the results of such investigations to be carefully recorded, correlated, and analyzed.

[1]Published in the September, 1914, issue of THE MODERN HOSPITAL.

It may be true that the average hospital lighting fixture in use up to the present time has been of a type most trying to the eyesight and at a time in the experience of the patient when the greatest care should be used in this respect. This is probably largely due to the failure on the part of the architect to appreciate that the requirements of hospital lighting are essentially different from those of other buildings. An intensive study of the purposes and requirements of hospital lighting is essential to the securing of the best results. As pointed out, the development of hospital construction and equipment has been extremely rapid in recent years, and the development of the lighting equipment to meet the special needs of the hospital has lagged behind. Both efficiency and service have suffered in this respect.

The art of illuminating engineering has advanced very rapidly in recent years, and doubtless will continue to advance, with the result that new electric lamps of increased efficiency will be available, new designs of fixtures will be made to meet new ideas and conditions, the opinions of those connected with the hospitals will be modified, and all of these facts will result in a complete change of illuminating ideals, thus making any standard now adopted obsolete in a very short time.

In connection with the design of the illumination equipment of the hospital building, I would urge that there should be more cooperation between the designing engineer, architect, and superintendent. Indeed, I would go further, and urge that the staff of the hospital, and even the principal members of the visiting staff, should be consulted, as all of these men share in the responsibility or use of the hospital. As a matter of fact, in many cases no one other than the architect is allowed to exercise judgment in this matter, and too often the results aimed at are esthetic rather than practical. I would even advocate that the operating engineer of the hospital be a member of the council which decides these problems, as many of these men have been long connected with hospitals and are intimately in touch with the difficulties experienced in maintaining and operating the service.

It is not an uncommon thing to find a new hospital in connection with which there have been no conferences on the subject of illumination between the architect or engineer and the hospital authorities, the idea apparently being that the architects or engineers are engaged as experts and should know just what would best meet the conditions. Such a plan waves aside entirely the immense amount of valuable experience and information which the superintendents, doctors, and operating engineers have accumulated in the conduct of other hospital buildings.

The author's argument in favor of uniformity of degree of brightness is well taken. There must, however, conjointly be considered the problem of efficiency of current consumption and cost of installation as limiting factors, but not, as is sometimes the case, to the extent that the cost is allowed to weigh against the efficiency of the plant and the comfort and welfare of the patient.

As the author well points out, the condition of the hospital patient is such that he should be surrounded by the best conditions possible, and the items of expense and efficiency should not be allowed to weigh against the comfort and benefit to the patient.

If the author is arguing for the day illumination of large wards by means of windows placed on one side only, I would caution that such a plan would interfere seriously with natural ventilation. It is granted that in a large ward the patients are subjected to a trying condition in

that practically every patient must face a window. On the other hand, these windows are designed for the purpose of ventilation as well as light. I would suggest that curtains intelligently used would go far toward relieving this difficulty without interfering with the ventilation.

The data relating to calculation of like requirements in various departments of a hospital are well stated. I would, however, suggest that the 3-foot candles, instead of 4½-foot, are sufficient for direct lighting.

Type C nitrogen lamps, which in small sizes of foreign make heretofore have not been standardized, are now standardized by the General Electric Company in sizes from and including 60 watts to 2,000 watts, with overall dimensions and light centers, making them adaptable for scientifically designed reflectors. The nitrogen filled mazda lamps are about twice as efficient as Type B lamps, due to their actinic rays containing the necessary blue rays, which make for the nearest approach to daylight, doing away with artificially colored glass reflectors. This has been found necessary with tungsten lamps, and, when type C mazda lamps are used in conjunction with light walls and ceiling, an illumination nearest to daylight is produced, thereby making lighting of hospitals ideal. The kitchen and service rooms require more lights than corridors, toilets, and store rooms.

In addition to the plug outlets in the hospital, there should be provided waterproof plug outlets for lights, heating pads, signals, etc., on piazzas and roofs, this being especially important in view of the liberal use of outdoor treatment advocated at this time. I would suggest that the plug outlets of the wards and patients' rooms should be placed at the height of approximately 32 inches above the floor, as this is found to be much more convenient than the former method of placing these plug outlets in the baseboard.

There should be occasional bracket lights on the wall over the bed in addition to the wall plugs, as it is often a source of delay and annoyance to the visiting doctor to have to wait for the bringing and connecting of portable lights, especially when the bracket light will serve every necessary purpose for a brief examination.

In addition to the plug outlets in the wards, there should be similar outlets in the quiet rooms, operating rooms, examining rooms, and electrotherapy rooms, and also in laundry, sewing rooms, offices, etc.

Mr. Sturm's paper points out the adopted plan of a change in the color treatment of the operating room. The writer agrees in his suggestion that the walls should be treated in light tan color, with straw-color ceiling, and also in his suggestion that the rooms and wards should be treated with light-green on wall and straw-color on ceiling.

There is manifestly a radical change of opinion as to the color treatment of the operating room. The tendency to get away from the glaring white walls is marked. This will have its effect on the lighting problem of this room. I question whether the red tile is not also tiring to the eye, and I suggest that possibly a gray tile might be better. It must not be forgotten that this tile must be non-absorbent, so that the floor may be easily and thoroughly cleaned.

Suggestions are offered in the paper for the control of the room lighting by means of the use of the two-point and three-point switches, by means of which the first push on the button will turn on one light, which may be of small wattage for night use, the second push turning on the two remaining lights, the third push turning on again the first light, while the fourth push turns off all lights. The use of such switches is to be commended, but the use of the momentary contact switches suggested for corridors, etc., seems an unnecessary expense and complication, even for the operating room.

The reflector on the indirect or semi-indirect lighting fixture, as now constructed, is a troublesome dirt collector. It is difficult to clean and expensive to renew in case of breakage. The problem of designing a fixture free from these difficulties needs careful study, as the indirect or semi-indirect method of lighting has manifest advantages which will lead to its retention.

Referring again to the subject of operating room lighting, I feel that there should be no permanent ceiling fixture in the operating room. It is a dirt collector and distributor, while it increases and concentrates heat over the operating table. I would suggest, as a method of lighting the operating room, the placing of a number of lights in metal cases built into recesses in the wall near the ceiling, with a similar light in a recess directly over the operating table, and one at each side of the room near the floor to light the side of the table when specially required.

The cases holding these lights would have suitably shaped mirrored reflectors, with cover plates set flush with the surface of the wall and ceiling. These cover plates would consist of a white enameled ventilating metal frame, holding a glass screen, the reflector and screen to be so designed as to place the light directly on the operating table. The covers would be hinged at the top to facilitate the renewal of lamps and cleaning. These lights would be controlled by a single or individual switch, or both, and could be so placed that the light would come from a number of sources in such a manner that the operator or attendants at the table could not interfere with the light on the table, or at least not to an extent which would diminish the light undesirably or cast shadow. Supplementing this, I would propose that portable lamps be used when local illumination is required, these to be connected to waterproof floor plugs.

The selection of an architect to build a hospital or some part of one comes up every little while. This question is an important one, and hospital boards and superintendents ought to do some real thinking about it. The best hospital architects in this country, and they are few in number, decline to be responsible for the interior arrangements of new hospitals until the plans have been passed on by a competent hospital administrator. The architect who is willing to shoulder the whole affair without consultation with someone who knows what the building is to be used for, and how, belongs to the class of "fools who rush in where angels fear to tread." There is no architect competent to design a hospital. It is the business of hospital managers to design hospitals; it is the business of the architects to build what is laid out. The sooner architects take this view of their work, and the sooner hospital people realize the functions of the architect and their own responsibilities, the sooner we will have well-planned, conveniently arranged institutions, capable of economical and facile administration.

The Minnesota State Board of Control has recently made a report of the work of the State Hospital for Indigent, Crippled, and Deformed Children, of which Minnesota is justly very proud. The board states that nearly 1,000 children have been treated in the institution since it opened in 1907. There have been 499 absolute cures and 248 partial cures, and only 72 deaths. Dr. A. J. Gillette, of St. Paul, founded the institution and has been at its head since its foundation.

THE PRIVATE HOSPITAL AS A PUBLIC INTEREST.[1]

Publicity as to What the Hospital Is Doing Is the Best Method of Winning Friends and Support—Every Social and Benevolent Agency Should Be Cultivated.

BY W. T. GRAHAM, SUPERINTENDENT IOWA METHODIST HOSPITAL, DES MOINES, IOWA.

The increasing hold of the hospital idea on the minds of the public makes the successful presentation of a hospital enterprise much easier today than a decade since, while the multiplicity of the calls on the purse for civic or social betterment makes it more necessary that the appeal be clean-cut and convincing.

Exciting public interest is largely a matter of education where a new hospital is in view. Where an established hospital seeks funds for expansion, it becomes a matter of giving publicity to the project.

A prominent advertising specialist recently said: "A successful advertisement arrests attention, keeps attention to the end, and is convincing. Furthermore, a successful advertiser must have something worth the price asked. You cannot boost a bad thing by good advertising." Let us see how this applies to the hospital: support for a hospital enterprise requires good advertising—ethical, dignified, tactful, convincing expressions of policy; record of service and illustrations of its public utility will secure sustained interest.

Let me suggest some of the motives influencing gifts to hospital work as indicating the nature of the effort necessary to secure attention.

Let us assume that underlying all motives is that of the Good Samaritan—true benevolence—or the conception of responsibility to God for the furtherance of His kingdom on earth. This is undoubtedly the most common and admirable of all motives. However, there are those who seem to be influenced only by self-interest—the expectation of gain, direct or indirect—the love of personal prominence in a desirable association or notable movement. A hospital may favorably influence the value of real estate in a neighborhood, or it may mean a demand for supplies that would profit the prospective giver.

Pride in some denomination, some fraternal order, or some peculiar professional practice is often appealed to successfully; civic pride that a city should have hospital accommodations equaling those of some other ambitious rival; or the intelligent appreciation of the true value of the hospital to the community; or the motive may be the desire to erect a memorial to some loved name.

The raising of funds for a well-discerned public necessity, ably managed, needing support for the enlargement of its work, is easier now than securing assistance to duplicate efficient existing hospitals. This is one of the significant indications of the value of the effort of hospital workers to educate the public to a better understanding of sane hospital establishment.

The sympathy of the public is large; it is often incredulous, and suspicious of the motives of those seeking funds, but is responsive to the proper touch. Nothing appeals to this emotion more strongly than the exhibition of sympathetic service to the needy. Hence it is natural that, as an appeal, nothing should be more used or abused. So people are beginning to look more closely into appeals made from that source. They are giving as never before, and inquiring in the same way as to the uses made of funds subscribed to ameliorate the condition of the unfortunate.

[1]Read at the sixteenth annual conference of the American Hospital Association, St. Paul, August 25-28, 1914.

Needed funds will go with greater facility to the hospital of efficient service, and in the public mind this means more than the giving of a dose of medicine on time, or an operation at an opportune moment. Technical skill will count for much with the trained worker, but the public in general judge hospital care by what it can see and understand. Intelligent sympathy is the keynote of success in hospital work. The feeling of security that a patient's welfare is being safeguarded at all times will do more to enhance the reputation of a hospital than any one single agent. The reputation for courtesy is one of the best assets a hospital can acquire—courtesy and tact will sound its name farther than any subtle appeal.

The successful hospital is accommodating—willing to pause long enough to consider reasonable requests, and to grant them if they do not interfere with some greater right. Kindness never appears better than when clothed with firmness, and kindness or consideration should never mean a departure from a well-digested plan of practice.

Frankness in dealing with the public will do much to promote confidence. The public must be taught to feel instinctively that statements represent exact conditions—that there is no juggling with figures presented.

Probity within the institution must be unquestioned—that funds given for specific purposes will not be diverted to some other use, however laudable. The public must have confidence in the wisdom of the managers—that enterprise and ambition will be governed by conservative consideration in every proposal involving considerable expenditure or exchange of policy.

Impartial consideration in the relation to patients, physicians, friends, and nurses will do much to cultivate friendly interest. Nothing furnishes better food for the vicious than the exhibition of favoritism to others. Recognition of ability, of kindliness of purpose, of interest, is laudable, but the distribution of favor must be founded on better premises than these—according to their needs as our ability lies, without preference or precedence.

These things, however well developed, will not take the place of technical efficiency. They will not apologize for blunders in the reception of patients, omissions in expected attention, or lack of compliance with orders. The business conduct of the hospital is important to that large class of prospective givers who have amassed a competency by the practice of economy and business forethought. The hospital should welcome friendly inquiry as to its methods.

Business success comes from a close study and comparison of resources, collections, and expenditures.

Are room rentals, board of patients' visitors, and special nurses, medicines, dressings, skiagraphs, massage, medical and electrical baths, anesthetics, barbering, telephones, and fans, bearing their proper share of the burden? Are some patients bearing part of the cost of service commonly rendered to others, or does the cost in each case represent the financial obligation of the patient? Are collections adequately looked after? *Be sure the hospital service is good and then insist on payment for it, even through a process at law.* Notes should be secured for unpaid balances before a patient leaves—it has many advantages.

Do expenditures represent equal returns? Are purchases made with the same intelligent forethought and knowledge of market conditions used by the prosperous retail merchant? Is the work planned to secure the best results from the smallest amount of help, and proper consideration given to the money value of the careful, intelligent, staid employees?

Is a proper check and inspection made of goods received, supplies issued, and materials discarded? Are issues based on careful estimates of needs, comparisons of use, and proper supervisions of methods?

Is the domestic work planned by schedule that each one knows the time and scope of his work? Is the mechanical department subject to the same care, scrutiny, and economical equipment to be found in similar successful commercial plants?

Are wastes inspected, recorded, and utilized? These things must be answered in a business manner to secure business men's approval.

Do the board of managers represent influential factors in the community? The board of managers must have the implicit confidence of the people. They must be men of high standing in the community, with high ideals—men who have made a success in life without making a host of enemies. The board must be a source of strength by the mere association of their names. They must be interested, willing, and able to give a share of their time to the enterprise. They must have friends who trust them, whom they can and will influence to give largely. The board must represent enthusiasm, conservatism, and ability. They should not be selected for short appointments. "Experience teaches that knowledge is power" has a new emphasis in this connection.

The public can always be counted on to give a ready ear to statements concerning the cost, value, and amount of free service rendered the necessitous poor. This work cannot be carried on by funds furnished by receipts from patients without injustice to paying patients or to hospital donors. It should be generally known that the only requisite for admission to free care is inability to pay for the service to be rendered and pathological admissibility. There is, of course, the usual tendency of some applicants to confuse inability with disinclination. The exclusion of impostors and making patients pay who are able are a passport to public favor. Outside sources of information and careful investigation should be utilized in determining the fitness of each applicant; but, once in, let there be no grudging ministration. Let sympathy and skill attend in the ward as in the private room. The inclusion of any part of service rendered at schedule rates, though less than per capita cost, in statements of free service is misleading and unfair. Let the public know the work done for less than per capita cost, and—who pays for it. Willingness to provide for the free care of individual cases, or the support of such work as a whole, for a definite period is not hard to find. Intimate acquaintance with pitiful cases cared for, visiting properly safeguarded, appreciation of gifts—valuable or useless, casual exhibition of some of the wonders of modern hospital equipment, should be mentioned.

It seems hardly necessary to mention here the obvious vital importance of the interest and cooperation of the medical men. Attach them with bonds of steel, but equate their enthusiasm and expectation, that the project does not receive blows aimed at someone behind. Let the staff be selected from the representative men, in each branch, of such prominence that their names will be all the apology needed for their appointment. Give early recognition to the ability of the rising physician or surgeon, and attach him to the hospital in some capacity, thus providing against mutability in the strength of the staff by the ravages of time. There should be confidence in the invariable, ethical, and impartial conduct of the hospital's relation to its physicians. There are always men who will need more time and attention than others, but it should be of the same quality throughout. Let the medical men know that their cooperation is appreciated. The value of the hospital connection as an important factor in the community, and the conviction that the hospital and the physician represent the best combination for recovery, is a fact of growing significance. Let conservative consideration and deliberate action be the answer to impatient request, that the resulting equipment may be of generally recognized utility with the absence of expensive discarded experiments. The hospital without adequate funds cannot afford to experiment, but no hospital can afford to be without necessary equipment. Imbue physicians with the value of the hospital to the profession at large; its tendency to improve the general medical atmosphere, to elevate the conception of the physicians' responsibility to the public; the stimulation of medical attention to the unfortunate, and a study of social conditions.

Show the public the strength of the hospital as an educational factor in the community in the dissemination of useful knowledge concerning the nature and prevention of disease, that the nurses are filled with the hospital spirit in extending this knowledge wherever they go, that patients become conversant with better methods of care, that visitors get a new understanding of the value of preventive efforts, that women learn of better domestic methods and men a better appreciation of their worth.

Establish cordial relations with the various charitable organizations. Make use of their facilities in investigations, and accord them a share of favorable consideration in handling their problem.

Let the practical-minded be shown, as a public asset, the value of disabled men and women restored to the ranks of workers, with the consequent relief of the burden of dependent children or helpless adults; of the value of the crippled child restored to health and promise; the lessened burden of public care for chronic invalids, because of early recognition and attention; and the decreasing number of defective progeny by hospital precautions.

In the absence of city and county hospitals, let the public know the economy of aiding the hospital, in caring for public charges, as a lessening of public expense, but—"beware the Trojans bearing gifts." Such patients should be admitted under general rules, and per capita cost should be insisted on as the minimum remuneration.

In these days of social survey, the approbation of the representative commercial body or board of trade is a most important aid in establishing the need of a hospital enterprise.

The employment of efficient permanent field representatives is of proven worth. There is much in the regularity of presentation—in keeping the hospital on the minds of the people. Prominence in reflection is what brings sales to well-advertised articles and money bequests to hospitals. A field agent has the time to favorably influence large givers; he reaches also that large army of small givers that total such immense gifts to charity each year. There is an army of modest self-sacrificing givers, without whom our hospitals would be diminished by over one-third. The importance of cultivating this field cannot be exaggerated. No hand too small, no tongue too weak, to help. Hospitals are built by large gifts, but sustained by small.

In cultivating interest we must distinguish between attracting attention and securing conviction as to the necessity and amount of funds sought. I question the ultimate value of sensational methods in attracting attention, unless the serious character of the institution be so well understood that it cannot suffer from any reflection of suggested flippancy. The efforts in securing permanency of

interest seem more and more valuable—the keeping of the institution before the public by dignified, tactful, regular presentation.

A model hospital bed room, with a nurse in attendance, at a fair or exposition, and abundant literature, that will cause people to think, will be worth more in the long run than attempted force. A window in a prominent location, fitted up as a small babies' ward, with trenchant, pointed, and easily read statements; a model emergency ward in or near a railroad center, illustrations of first aid in common disabilities, may furnish novel features on a program. Lectures and presentations at women's clubs, fraternal associations, churches, boards of trade, industrial plants, picnics, or conventions, need only to be mentioned as samples of activity.

Newspapers sometimes seek information against the recognized medical ethics of the sacredness of the body or personal affairs; but if a readiness is shown to furnish them with items of general public interest, they will be found to be friends of great value. Notices of meetings, plans, social and professional gatherings, movements of officers, unusual or pitiful instances of hospital relief, will be found to be always welcome to their pages.

Harmonious cooperation with boards of health, lining up shoulder to shoulder with their efforts to better conditions, is at once the duty and the pleasure of the properly administered hospital.

In this brief sketch I have endeavored to show some of the ways a private hospital may become a public interest. I have endeavored to show how the hospital itself can be an advertisement to arrest attention, to keep attention, to convince, and to be worth the price asked.

GREEN BAY HAS NEW HOSPITAL.

Sisters of St. Mary's at Wisconsin City Have Opened New Modern Building—Now Have 150 Beds.

The $25,000 addition recently completed for St. Mary's Hospital, Green Bay, Wis., increases the capacity of the institution to 150 patients. The new building is 120 feet long, 42 feet wide, and four stories high. It is connected with the old building by a fireproof wall and metallic doors with wire glass, the object being to prevent the spread of fire from the old building to the new, which, with this precaution, is fireproof.

The stairways in the addition are constructed of steel and concrete. Terrazzo floors are laid throughout the structure, and the toilets are of marble. The lavatories are finished in Italian marble. Each toilet is equipped with shower and needle bath. A public toilet and bath is provided on each floor.

Suites of rooms are a feature of the hospital, and the suites are provided with private baths and toilets. All beds are three-quarter width and have hair mattresses. The rooms are finished in mahogany, Circassian walnut, or oak, and the furniture corresponds with the woodwork. Each room has a telephone and electric fan connection, and is provided with forced air ventilation. The patients have individual trays and dishes. No bells are rung in the new addition. Signals are conveyed to the desk of the supervising sister on each floor of the central building. Here the signal is registered upon a call board having a buzzer attachment. There is a fire hose on each floor to use in case fire should start in any part. An automatic telephone system has been installed. There are bubblers on each floor, with an attachment which provides ice-cold water for patients.

The operating room is 29x17 feet, and the walls are of white glass. Forced draft ventilation keeps the air pure and the room free from odors of ether. The ceiling is twenty-eight feet from the floor, and light comes through large windows in the ceiling. The indirect system of electric lighting is employed.

The laundry and heating plant buildings are separated from the hospital to eliminate the danger of fire from this source. The heating system installed requires the water to be heated by steam in a large drum before it passes into the radiators.

Admission of Patients to the Hospital.

A good many hospital people have of late been finding it difficult to satisfy the medical staff in the admission of patients to the hospital. They say the doctors complain that the cases are not carefully enough distributed, and do not find their way to the proper location or the proper service in the hospital. This is probably due to the fact that the burden of making differential diagnosis is placed on the admission officer. Where there is a very large number of admissions, and there is a thoroughly competent medical man in charge, the probabilities are that he is too busy to make more than a cursory examination, and then only for the purpose of assigning the patient to the proper place in the hospital. The admission room is no place for a fine diagnosis; indeed, one of the very best admission officers in this country is a nonmedical woman who was a public welfare worker before she was given charge of the assignment desk in one of the largest and best dispensaries in the United States. Almost her whole technic is embodied in the question, "What seem to be the matter; what do you complain of; where are you sick?" The answer to this question, in nine cases out of ten, is sufficient to justify the assignment of the patient. In Bellevue not long ago less than 50 percent of the cases that went to autopsy were diagnosed correctly, and presumably these cases had all the advantages of the complete facilities of a great hospital for diagnosis. How, then, are we to expect much in a snapshot diagnosis in the admission rooms, and what good purpose would be served by having the admission officer spend a lot of time in the archaic routine of physical examination? The purpose of an admission room is to find out, first, whether the patient needs the hospital, or should be treated in the out-patient department or back in his own home; second, in what part of the hospital the patient probably belongs. The upstairs diagnosis, with all of the scientific aids of the laboratory and the x-ray, and the trained eye, ear, and finger of highly specialized men, coupled with a period of observation sufficiently long to bring results, ought to do the rest.

The Ann Arbor (Mich.) *News* thinks the new home of St. Joseph's Sanitarium at Ann Arbor is almost attractive enough to tempt one to undergo an operation, whether he needs it or not. The building contains 14 private rooms with bath, 65 additional private rooms, and three wards of 6 beds each, making the capacity of the institution almost double that of its old quarters. In the new structure there are no angles, no crannies for dust and germs, and the air is changed throughout the building every four minutes. At the rear of each floor is a sun parlor, the one opening off the sisters' quarters being reserved for their use, while the others are for the patients. In the operating rooms the fixtures are controlled entirely by knee pressure, so that the surgeon's hands may be kept free from possible contamination from that source. At every bed is a light, with attachment for fan and push button for signal light. In short, the new sanitarium is believed to be the last word in modern architecture and equipment. The laboratory is being furnished by Dr. C. G. Darling, and the x-ray and hydrotherapeutic rooms by Dr. Theophile Klingman.

CURRENT HOSPITAL LITERATURE

Albert Allemann, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

The American Red Cross Hospital in Munich. (From a letter to the Deutsches Journal, New York.)

The hospital was established by the American colony in Munich. It is located in a private building leased for the purpose. Forty-five American ladies, among them Mrs. T. St. John Gaffney, Miss Edith Walker, Mrs. Chas. G. Miller, Countess Lerchenfeld, nee Wyman, and Mrs. Chas. Cahier have devoted their services to the hospital. This American institution is doing a great work, and has impressed the people of the Bavarian capital with its excellent organization, management, and equipment. No small merit for the success of the undertaking is due to the American consul-general, Mr. T. St. John Gaffney.

The Royal Orthopedic Hospital in Munich (Die kgl. orthopadische Klinik in München). F. Lange, München med. Wchnschr., 1914, LXI, No. 22.

This new clinical hospital is connected with the Bavarian State Institution for the Education of Crippled Children. The building consists of two wings, which meet at a right-angle. One wing contains the home for crippled children, in which 150 pupils are educated and trained in various trades; the other wing forms the clinical hospital containing 90 beds. The institution is situated in a healthful and pleasant region near the city of Munich, offering exceptional advantages for open-air treatment. Of special interest is the fact that the institution uses light signals instead of bells, making use of different colors for the various purposes.

Reserve Hospitals and Disposable Beds (Reservelazarette und vorhandene Krankenbetten). Dr. Steinmann. München med. Wchnschr., 1914, LXI, No. 38.

The present war has aroused the patriotic and public spirit of the whole German people. Cities, towns, and even villages have offered their services for the care of the sick and wounded soldiers. Private halls, schools, and other public buildings have been converted into reserve hospitals. The author computes that there are about 230,000 reserve beds at the disposition of the authorities. Adding to this number the beds of the regular military hospitals and of the field hospitals, we get about 400,000 beds, a number far exceeding any possible demands. Of the 6,000,000 German soldiers only 3,000,000 will see actual fighting. Experience has shown that in a modern war about 20 percent of the combatants are wounded, and, assuming that it takes on an average six weeks to cure a wounded soldier, the author calculates that the people have offered the authorities 100,000 beds more than are needed. Many of these offers have already been declined. The author advises, above all, the smaller communities not to go to the expense of establishing reserve hospitals, especially if they possess a community hospital.

Suicide of a Patient in a Hospital and the Liability of the Director of the Hospital (Selbstmord eines Kranken in einer Heilanstalt und die Haftpflicht des Anstaltsleiters). Ztschr. f. Krankenanst., Leipzig, 1914, X, No. 24.

A business man was treated for severe neurasthenia at a sanatorium. He suffered from suicidal mania, which manifested itself at certain times. During one of these spells the patient hanged himself. The widow and children of the deceased at once sued the owner of the institution for damages, but without success. A suit was then brought against the medical director for alleged carelessness. The court refused the annuity asked for on the ground that it could not be shown that the patient, if he had lived longer, would have been able to attend to his business and provide for his family. The court held that for a successful damage suit two prerequisites were essential—(1) the physician must have been unreasonably careless, and (2) it must be shown that the family suffered real damage through the death of the patient.

Tubercle and Influenza Bacilli Carriers in Open Health Resorts and Sanatoriums (Tuberkulose- und Influenza Bazillen-Träger in offenen Kurorten und Heilstätten). Dr. Ritter. Med. Klinik, Berlin, 1914, X, No. 25.

The author comes to the following conclusions: In a well-managed sanatorium the danger of infection from tuberculosis and influenza patients is slight, and the institution is not dangerous to the surrounding country. Patients with pulmonary tuberculosis are not dangerous in well-managed open health resorts, but, wherever possible, it is advisable to place in sanatoriums patients who cough and expectorate, where they receive better care and treatment. The danger from influenza bacillus carriers is greater than that from tuberculous patients, but this danger can be minimized by proper hygienic measures. The chief danger of infection lies in the beds, in the preparation and preservation of food materials, and in the treatment of used garments. All sanatoriums, hotels, etc., should be held to strictest cleanliness by police regulations. The hygienic supervision of such institutions is a great necessity.

The Results of the Marine Cure of the Milanese Hospital at Celle in Liguria (Risultati della cura marina nell' ospicio milanese di Celle Ligure). E. Roncoroni. Ospedale Maggiore, Milano, 1914, II, No. 7.

The Italians were the first to establish seaside hospitals for the treatment of tuberculosis. The mild climate, the pure air, the wealth of sunlight, the beautiful seashore render Italy especially adapted to this method of treatment. Yet, according to the author, France, Germany, England, and other countries are far ahead of his country in the number and efficiency of seaside hospitals, though those nations enjoy far fewer natural advantages, as their seaside hospitals are exposed to the rough winds of the north, and the sunlight, which is an important factor in the treatment of tuberculosis, is much less abundant. While altitude, he says, is a valuable factor in the treatment of this disease, it cannot surpass the seashore as a remedial agent, and Italy should devote all her efforts to establish seaside hospitals.

The hospital which the city of Milan established at Celle on the coast of Liguria has made a splendid record. During the year 1913 the city sent 1,614 tubercular patients to the seashore. The hospital was open from May 21 to October 2. Each patient stayed on an average of

forty-three days at the institution. The therapeutic measures were very simple, and consisted almost entirely of natural agencies, as seabaths, sunbaths, open-air treatment, and gymnastics. The results for the glandular forms of tuberculosis were very favorable, no less than 68 percent of the patients being cured. In the form of cutaneous tuberculosis 50 percent were cured. Of the patients with tuberculosis of the bones and joints 34 percent were entirely cured, 50 percent improved, and 16 percent remained stationary.

Hospitals and the War. Hospital, London, November 7, 1914.

It is interesting to note that with the influx of wounded the London hospitals are making strenuous efforts against interference of the ordinary work in treating the poor of the neighboring districts. At St. Bartholomew's Hospital one wing containing 174 beds has been placed at the disposal of the war office. It has been about two-thirds occupied since the first demand was made on it in the middle of October. Middlesex Hospital has allotted about 85 beds, with the reservation of 130, at the convalescent home at Clacton-on-the-Sea. At the Royal Free Hospital, which has been appointed as a section of the fourth London General Hospital, about 40 casualties have been provided for. North London or University College Hospital furnishes three wards for the wounded. St. Mary's Hospital has no wounded among its patients. At Guy's 30 wounded officers are being accommodated in a special ward, which is fitted with cubicles. About 68 wounded soldiers are receiving treatment in Westminster Hospital.

Latent Dysentery or Dysentery Carriers in Sarawak, Borneo. W. L. Christie, Brit. Med. Jour., London, 1914, II, 118.

The author found that during nine months, of 554 cases admitted to Sejijah Hospital, 65 were dysentery carriers and 19 others had usual signs of the disease. Thus there were 12 percent of carriers of latent dysentery and 3.4 percent of actual cases. The actual death rate of hospitals reached only 3 percent on all cases and the three deaths out of 33 cases of acute dysentery he believes were due to the disease not being recognized earlier and not brought to the hospital until in a dying state; that after getting emetin and cases in first stage there were no deaths. His conclusions are that 30 percent or 40 percent of entire population are dysentery carriers; that the examination of them early and treatment with saline clears the colon of ameba and prevents dysentery; that much invaliding and debility are due to latent dysentery; that ameba is of one type, and cannot safely be pronounced nonpathogenic at any time; that emetin is most valuable in obstinate, latent cases, and is essential in dangerous acute amebic dysenteries, robbing them of their terrors.

A Few Observations of an American Hospital Architect. E. F. Stevens. Het Ziekenhuis, Amsterdam, 1914, V, No. 7.

While the author praises the hospitals of Holland as well-planned, magnificent institutions, he finds that, from an American viewpoint, they could be improved in a few details. Thus, the doors used in Holland institutions are paneled with moldings, in which dust and dirt collect and which must be cleaned. The doors used in modern American hospitals have a smooth surface, affording no resting place for dust. The window finish can also be made without projections. American hospitals are generally provided with the sliding sash. By using the ventilating apron, the lower sash can be slightly opened and fresh air admitted without draught. The cabinets for the sink rooms, tea kitchens, etc., are usually made open, without backs and with a sloping dustproof top. This allows for cleaning at the back, as well as at the front, without moving the cabinet. The closet is made of the height of the door and only large enough to accommodate the personal belongings of the patient. The hardware used in the Holland hospitals is less simple than that in use in America. The masterkeying of which the American hardware is capable makes it possible to have but one small key to unlock all doors and cabinets in the hospital, and still have ample security with each individual lock.

The First Installation of Our Field Hospital (Die erstmalige Einrichtung unseres Feldlazarettes). H. Albrecht. München med. Wchnschr., 1914, LXI, No. 41.

The author, who is reserve surgeon in the First Bavarian Army Corps, describes the establishment of the field hospital at the great battle of Saarburg on August 20. From a height near Saarburg the whole valley in which the battle raged could be overlooked. But so different is a modern battle from former times, that no human being in the whole wide expanse could be seen. But numerous farms and villages were burning, set on fire by bursting shells, and the air was filled with the small white clouds of bursting sharpnel, accompanied by a continuous deafening roar of the heavy guns. At 9:30 a. m. the order came to establish the field hospital. The author says the division of labor, as established in the regulations of the German Hospital Corps, stood the test splendidly. When the order arrived, everyone knew what to do. The church, the school house, and surrounding buildings were converted into hospitals. Operation, bandaging, sterilization, and drug rooms were selected; beds, mattresses, etc., made ready; soup, tea, and foods for the starved wounded were prepared. So complete was the organization that in one-half hour everything was ready and the first operation could be performed. Even during the organization of the hospital the wounded, French and German, were brought in. A surgeon was especially appointed to receive them, to give those with painful wounds a morphin injection, and to assign them, according to slight or serious wounds, to the various buildings.

The Architecture of Emergency Hospitals. Hospital, London, No. 1481, 1914.

Among the many country seats in England which are being transformed into emergency hospitals for officers is Balmoral Castle. The fact is interesting in more ways than one, for Balmoral affords an example of that modified Gothic architecture which, for express hospital purposes, has been discarded for many years. The reception rooms on the ground floor are, of course, spacious, though even the ball room is by no means exceptionally large. In the case of the bed rooms a story is told which may be worth repeating. In the active days of John Brown, when Queen Victoria was in the habit of paying her annual visit to Balmoral, the minister in attendance was, of course, among the guests who were constantly coming and going. The story goes that a certain prime minister of large physique found difficulty in having his morning bath owing to the smallness of the bed room. Since then alterations have been made, but it is probably true to say that the nurses who will be installed at Balmoral when hospital work begins in earnest will not find their bed rooms in the castle larger than those of the average nurses' home. The point illustrates one of the chief difficulties of any architectural style based on the Gothic model—namely, that the convenience of the upper rooms

is bound to suffer from the limitations which the pointed gable and turret impose; for the Gothic, as Ruskin remarked, is that style which employs the pointed arch for the roof proper and the gable for the roofmask. Palladian, on the other hand, and we may say all post-Gothic styles, depend on breadth rather than height, attract the eye horizontally rather than vertically, and the extreme logical development of this principle is the pavilion of modern hospital architecture.

Less Meat in the Hospital Diet (Weniger Fleisch in der Anstaltskost). Dr. Meltzer. Psychiat.-Neurol. Wchnschr., Halle a. S., 1914-15, XVI, No. 25.

The author, who is director of an institution for feebleminded children at Grosshennersdorf, Saxony, refers to the researches of Chittenden, Rubner, and others, who showed that people in general eat too much meat. By reducing the quantity of meat in the daily diet at his institution, the children did not only show no decrease in weight, but he observed a markedly favorable effect on the epileptic children, who form about 50 percent of the patients. The epileptic attacks among these children have very greatly diminished, and cases of status epilepticus are now unknown in the institution. The author does not claim that all hospitals should reduce the daily quantity of meat to the same extent as he did at Grosshennersdorf, but he thinks that, if each institution would scientifically compute the nutrient material of the daily diet, it would be found that most hospitals feed their patients too much meat.

On Lighting the Operating Room in Small Country Hospitals (Zur Beleuchtung der Operationszimmer kleiner Landspitäler). V. Neumayer. München med. Wchnschr., 1914, LXI, No. 24.

Many country hospitals are so situated that it is impossible for them to obtain gas or electric illumination. These hospitals have always much trouble to get the operation room properly lighted. The author has obtained very favorable results with the Geg dry benzine lamp. A three-armed chandelier of this lamp gives a very bright light, sufficient to perform even the most delicate operations. The lamp is so constructed that the benzine is taken up by a porous stone and by a simple gasifier is carried to the incandescent bulb. The light is whiter than the incandescent gaslight. This lamp has also the great advantage that there is absolutely no danger connected with it, which is quite important in country districts, where provisions to put out fires are rare.

Should Hospitals on the Pavilion System Have Connecting Galleries or Not (Ospedali a padiglioni con gallerie di comunicazione o senza gallerie)? E. Bertarelli. Rivista di ingegneria san., Milano, 1914, X, No. 18.

Some time ago this question was submitted to the German hospital architects. The answers may be divided into three groups. Some of the architects maintained that a pavilion is a definite unit and should stand entirely separate; besides, the construction of subterranean galleries is an important item in the cost of construction. A second group considers connecting galleries a great convenience, as they protect the personnel in cold, rainy, and stormy weather. A third group of writers express themselves against subterranean passages. In their view the connecting galleries should be constructed above ground and in such a manner that they freely admit air and light. The roof, too, should be flat, that it may serve as a connecting passage for the second floor. Bertarelli himself is against subterranean passages, but considers covered, but open, galleries above ground a great convenience.

Simple Form of Dressing Sterilizer. Dr. Charles W. Cathcart, Edinburgh Medical Journal.

The author proposes to sterilize dressings at atmospheric pressure, and presents an improved form of dressing box, the original of which he has used for twenty years. He says it has always given perfect satisfaction. Of the improved apparatus the author says:

"The most important of these improvements consists in a simplified form of drum, which is now in the form of a cube instead of a cylinder. By adopting the cubical form I am able to dispense with the complication of sliding shutters, which were an essential feature of the drums previously used. The cubical box is open at two opposite sides. One constitutes the top; the other is provided with a false bottom of open wire-work, and forms the bottom. Each of these open ends has a detachable cover, which fits equally well upon the open ends or closed sides of the cube. During sterilization the covers are placed on the sides of the drum, leaving the top and bottom ends completely free for the current of steam to pass through and through the dressings. When the steaming is finished, the covers are replaced in position and the drum is lifted about by rings at the side.

Fig. 1. Cubical sterilizer, showing external aperture for escape of steam and controlling stop-cock opposite the filling hole.

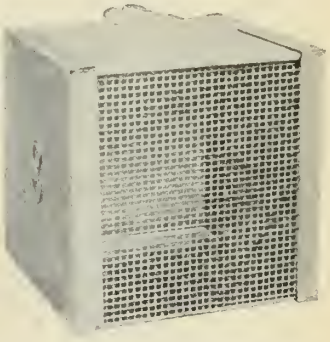

Fig. 2. Cubical drum laid on one side to show the open wire-work forming the false bottom.

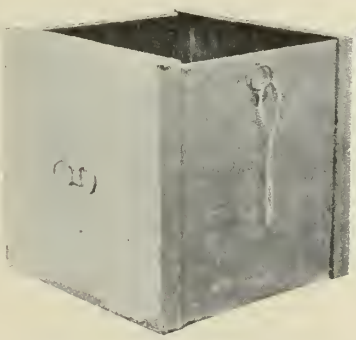

Fig. 3. Cubical drum with covers fitted on to the sides so as to leave the ends open during sterilization.

Fig. 4. Cubical drum with covers in position after sterilization is completed.

"The sterilizer is now also made cubical to suit the drums of corresponding shape. In its essential feature—i. e., control of the direction of the current of steam by means of a stop-cock—the sterilizer remains as before. I make the steam enter the inner chamber below the central part of the bottom of the drum. In rising up through the dressings to escape above, the steam drives all the air before it, and maintains a through-and-through current as long as the surgeon wishes. Half an hour is all that I recommend—perhaps less would suffice. Owing to the kindness of Dr. McGowan, of the Royal College of Physicians' Laboratory, who conducted the bacteriological inquiry, I find that sporing cultures of anthrax laid in the center of the drum filled with dressings are killed after half an hour's steaming."

St. Elizabeth's Hospital at Utica, N. Y., will begin the erection of a new home early in the spring. The building is to be four stories high and will contain accommodations for 100 patients.

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The Graduate Nurse.

I had long felt a hesitancy in using the term "trained nurse" without knowing why I should object to its use. However, I became more definite about it when, a short time ago, I found this sentence in the work of an educationist: "We cultivate plants, train animals, and educate persons." Clearly, the supreme idea conveyed by the word "cultivate" is that of value derived outside the object. The essential idea in "train" is that of habits, the object being an automatic, though conscious, mechanism; while to "educate" implies the developing of the object, or at least the developing of certain characteristics of it. To "educate" nurses is surely the big word we want, though it is desirable that for convenience we have nurses trained in certain habits, yet the word "trained" does not express nearly all we would mean. Qualities possessed by these young women who wish to become nurses must be developed, and there is no suggestion of development in the word "train." In other words, these women must be educated, and when the course of education is completed, we truly express our meaning by the term "graduate," rather than "trained" nurse. And, too, when we speak of this particular educational institution, I cannot see the necessity of adding the superfluous "training" to the fully adequate "school for nurses."

Doubtless I have said enough on this subject, and may trust that our beloved profession will steadily shed its frailties until it blossoms one day in its own perfection, the beauty of which must receive the homage of mankind. The intellectual attributes are in themselves praiseworthy, but it is not in these we place our trust. The profession has for its soul the woman-heart. So, nurses, I pray you, though the heavens fall, keep your hearts true, that the growth of the profession may not be retarded in these its tender years by one unprofitable member, and lest, my dear sisters, it turn in vengeance on you and by its first destructive stroke spoil the delicacy of the soft-toned sweetness in your hearts, reflecting the loss daily in your lives.—A. K. Winnipeg in the Canadian Nurse.

The first one-tenth of the life of an individual should be left to nature; no inhibition should be exercised or developed in the healthy spontaneity of the child, in my opinion, for the first seven years of life. To mix work with play, to surround instruction with great external interest, is the most efficient way to make permanent in the adult the infantile lack of derived intellectual attention.—Dr. Will S. Brown.

NEW INSTRUMENTS and APPLIANCES.

Vincenz Mueller, Technical Editor.
Geo. W. Wallerich, Associate Editor.

Practical Fistula Urinal.

Surgeons have forever been on the lookout for a suprapubic fistula urinal which would fulfill the two main indications demanded of such an apparatus—first, that it will hold the urine without leaking, no matter in what position the patient may be placed; second, that it could be worn by the patient with comparative comfort. Practically none of the apparatus that were heretofore available could be attached so that they would not leak unless they were strapped so tight that the patient was unable to bear them for any length of time. The apparatus illustrated here has been gradually developed from suggestions given the manufacturers by several experienced surgeons, and a sufficient number of urinals have now been applied and found so satisfactory that they may be unhesitatingly recommended to the profession.

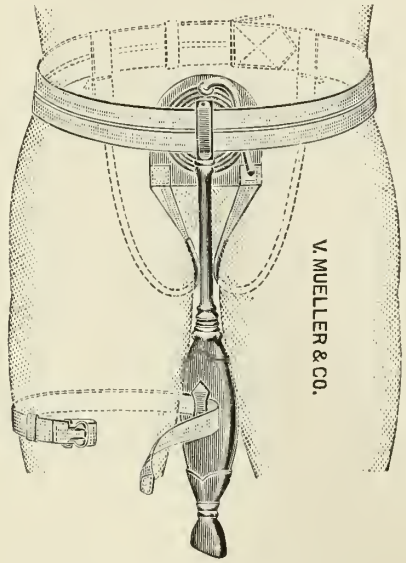


Fig. 1. Fistula urinal as applied to patient.

The apparatus consists of a round shallow cup of hard rubber, with an outlet on the bottom for the purpose of attaching a rubber tube and urine bag. This is entirely covered on the inside and outside with soft rubber, and to the edge of the inner rim is attached an inflatable rubber cushion. After the cushion is inflated, the outlet tube is tied, and the apparatus is strapped to the body by a strong belt of elastic webbing. In addition, understraps of non-irritating material are provided, and the urine bag, which has a hard-rubber outlet stop-cock on the bottom, is fastened to the leg by a light elastic strap.

If properly applied, this apparatus does not leak and can be worn by the patient with but little irritation.

Simplified Frame for the Application of Abbott's Scoliosis Jackets.

BY DR. A. H. FREIBERG, CINCINNATI, OHIO.

The Abbott method of treating scoliosis with the aid of special plaster of paris jackets, as introduced by him, has found great favor, not only in this country, but also in Europe. The method of procedure, as well as the necessary apparatus, have been fully described and profusely illustrated in American and European surgical and technical journals. There has been some criticism to the effect that the frame designed by Dr. Abbott is rather too complicated, and on this account Dr. Freiberg, who has had considerable experience with the Abbott frame, decided to have a frame constructed which will permit easier manipulation.

Freiberg modification of Abbott's frame.

The cost of this new frame is also considerably less, and this is quite an item, especially for the smaller and also for the larger hospitals, which often depend to a large extent on charitable contributions.

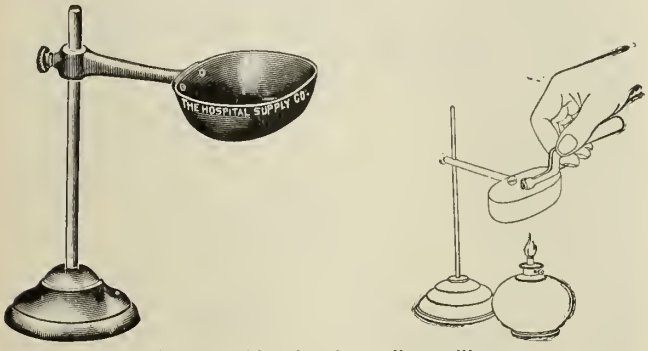
To publish here the entire technical description would require too much space, but, in order to give some idea of the simplicity of the apparatus, it may be stated that while there are nine different ratchets on the original Abbott frame, there is only one on this, which controls all the extensions. By having the upper horizontal bar placed several inches higher than on the Abbott frame, the new frame may also be used for the application of plaster of paris casts with the patient in a vertical position.

Taking into consideration the several improvements as well as the lower cost, it may be well worth while for the institutions contemplating the purchase of an apparatus for this work to investigate the merits of the Freiberg frame.

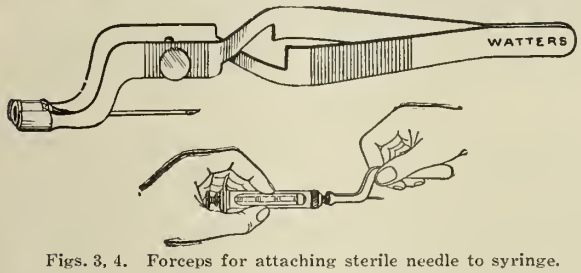
Watter's Hypodermic Needle Sterilizer.

There has long been a demand for a simple, efficient, and inexpensive apparatus for the purpose of making the sterilization of hypodermic needles a more uniform and certain procedure, and avoid the use of a common soup spoon, which has been usually used for this purpose This demand seems to have been supplied in Watter's hypo

needle sterilizer, which consists of a simple apparatus for sterilizing needles and forceps with which to fasten the needle to the syringe for sterilization. A small metal cup is attached by a horizontal arm to an upright stand (Figs. 1, 2), so that the cup may be raised or lowered over the alcohol lamp. A specially constructed thumb forceps (Figs. 3, 4) holds the needle by the hub, with the point toward the handle, as shown. The needle and syringe are boiled together in a little water over an alcohol flame, which operation requires less than two minutes, after which the needle can be picked up by pressing together the handles of the forceps and securely screwed to the syringe without its being touched by the fingers.



Figs. 1, 2. Hypodermic needle sterilizer.



Figs. 3, 4. Forceps for attaching sterile needle to syringe.

For complete hypodermic outfits for hospital use, an enameled tray is provided, fitted with a glass jar for holding the syringe, bottles for the sterile water and carbolic acid solution, and glass boxes for extra needles and cotton swabs, so that every article required for hypodermic medication is kept in the ward, covered by a sterilized towel or other protection.

To prepare for a hypodermic injection, the nurse first places the needle and forceps in the cup, covering them with a little water and lighting the lamp. In the meantime she draws the syringe full of carbolic solution and expels this into a medicine glass; then draws it full of sterile water, which is similarly expelled. She then removes the sterilized needle by pressing together the handles of the forceps and screws it on the syringe, as shown.

If the medicament employed is in solution form, it is drawn into the syringe through the needle direct. If tablets are employed, sterile water is prepared in the cup and the nurse draws the syringe full, throwing away what remains in the cup. A tablet is placed in the cup and the syringeful of sterile water is expelled on the tablet. As the water is warm, the tablet dissolves almost instantly, and thus gives the amount of solution required, which is drawn again into the syringe and injected.

The Beck-Mueller Ether Vapor and Suction Apparatus.

A new ether vapor and suction apparatus which has been used of late at the Cook County Hospital seems to bid fair to greatly simplify the ether vapor method of anesthesia, and also to allow less time being consumed for operating. The apparatus, while primarily designed for nose, mouth, and throat operations, is just as adaptable for all general operations, and should therefore be of especial interest to the hospital superintendent.

By the ether vapor method, anesthesia can be administered through nasal tubes, mouth gags with ether tubes attached, or by the intratracheal method. The advantage of such a method is acknowledged by all, since anesthesia can be given continuously during the progress of an operation in the nose or throat. Gwathmey and others advise the use of warm ether vapor, as by this means anesthesia is administered without the danger which might result from inhaling cold ether vapor, and anesthesia is produced quicker and with less tension on the part of the patient. The saving in ether is also a consideration.

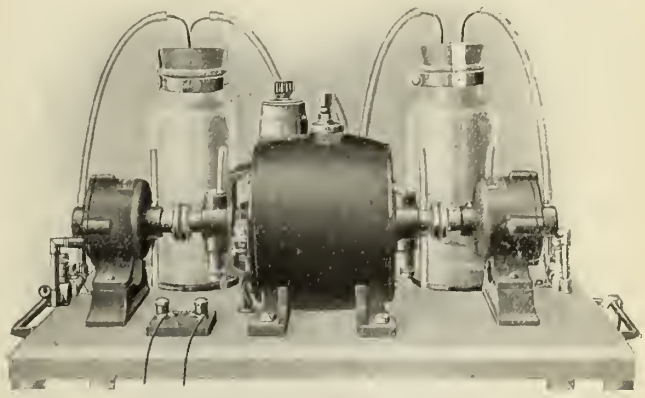


Fig. 1. Beck-Mueller ether vapor and suction apparatus.

There are at the present time several types of ether vapor apparatus on the market, but to practically all of them certain objections have been advanced. With most of them a foot bellows is depended on to produce the vapor, resulting in an unsteady pressure, proving tiresome to the anesthetist, and has a tendency to prevent the proper attention being given to the patient under the operation. In fact, most operators who have used ether vapor apparatus concede that pressure which is not constant and which cannot be absolutely controlled is undesirable. Other types of apparatus are motor driven, but many of these are faulty in that the pump and motor are belted, the belts frequently breaking at an inopportune time, causing delay and annoyance. Others are supplied with a motor which is entirely too small to do the work satisfactorily.

Suction or aspirating bottles have been used for some time for drawing blood from the field of operation, draining sinuses in operation on the bladder, and, in fact, wherever sponging is necessary. Aspirating by hand has not been altogether satisfactory, to say nothing of an assistant required to operate the pump.

The new apparatus here illustrated has been designed according to suggestions received from Dr. Joseph C. Beck, of Chicago. The points of improvement claimed over other types of similar apparatus are as follows: 1, a motor sufficiently powerful to operate continuously without overheating; 2, pressure pump directly connected to the motor shaft by a universal coupling; 3, absolutely constant flow of pressure and continuous vacuum; 4, heating unit under the ether container; 5, heating unit for the ether vapor; 6, filter, preventing the entrance of foreign matter into the anesthesia tube.

One end of the armature shaft drives a rotary pressure pump, and the other end a rotary vacuum pump. Attention is called to the fact that by this means both pressure

and vacuum can be operated at the same time, the action of the one not being affected if unusual demands are made on the other. Many pumps heretofore used were inefficient, as it was impossible to aspirate successfully during the time ether was being given. In this apparatus pressure and vacuum are produced by two separate units, driven by one motor, doing away with belts or friction wheels. The pressure delivered is sent through a metal tube terminating in the ether bottle.

For controlling to the minutest degree the amount of air pressure, an ingenious valve has been designed, so that the pressure can be increased or decreased at will. This is accomplished by means of a relief valve, so constructed that when the pressure is to be reduced through regulating the valve, the excess air is liberated through the relief valve. This relief valve is entirely automatic and needs no attention whatever.

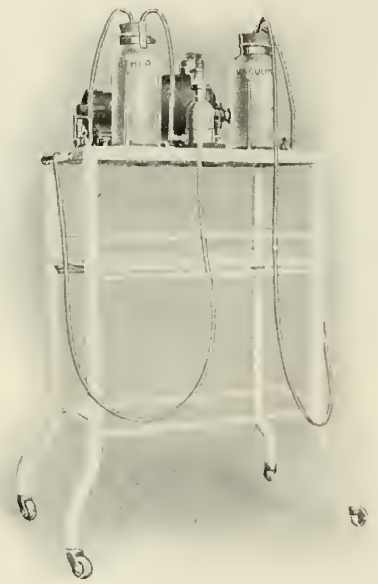


Fig. 2. Ether vapor and suction apparatus as mounted on movable stand.

The compressed air passes through the ether and ether vapor is formed. This ether vapor then passes into the heating chamber through the filter and is delivered to the patient.

The heating unit, which is placed under the ether bottle, and the current supplying heat to the heating chamber, as well as the motor itself, are all operated by a single switch. The vacuum pump is connected by a valve similar to the one used on the pressure side of the apparatus. Sufficient vacuum is produced for all classes of work, not only for operative work in the nose and throat, but also in gynecological and abdominal surgery.

Connection for the attachment of a monometer for intratracheal insufflation is provided. A valve for connection of oxygen containers is also furnished.

Sweet's Eye Localizer.

This is an improved apparatus for determining the exact location of foreign bodies in the eyeball and orbit by radiography. Practically every aid to surgical diagnosis has been subject to frequent and radical change within the last few years. Tremendous strides have been made in surgical technic, and corresponding advance has resulted in the mechanical equipment demanded. A most significant tribute to the efficiency of Sweet's eye localizer is, therefore, found in the fact that its essential principles remain the same as when first introduced nearly two decades ago. Today it meets the needs of ophthalmologists with the greatest exactitude, and yet is so simple in operation that any radiologist can readily master every detail involved.

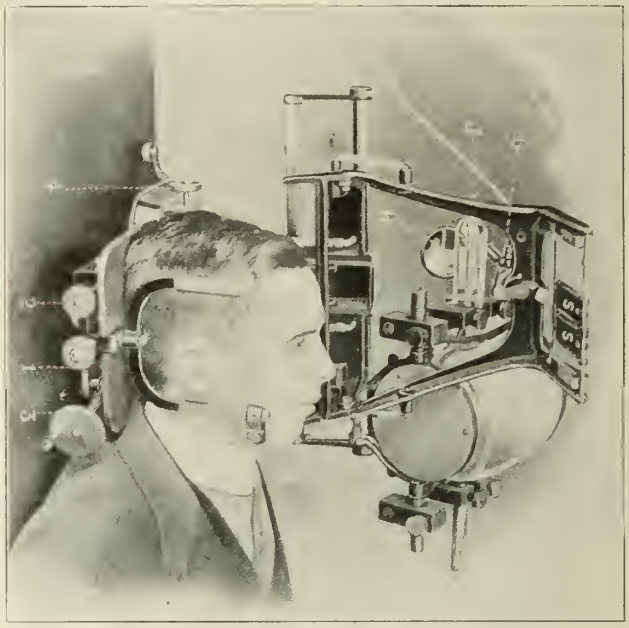


Fig. 1. Patient in position, awaiting adjustment of apparatus, with the upper jointed part turned back.

One of the principal difficulties experienced with earlier types of this apparatus was to determine exactly what measurements were to be made from the radiographs and the manner of transferring them to the localization chart to find the lines of shadow of the foreign body at the two exposures. In the new and improved type of Sweet's eye localizer the same principles are involved as in former types, but the construction of the instrument relieves the

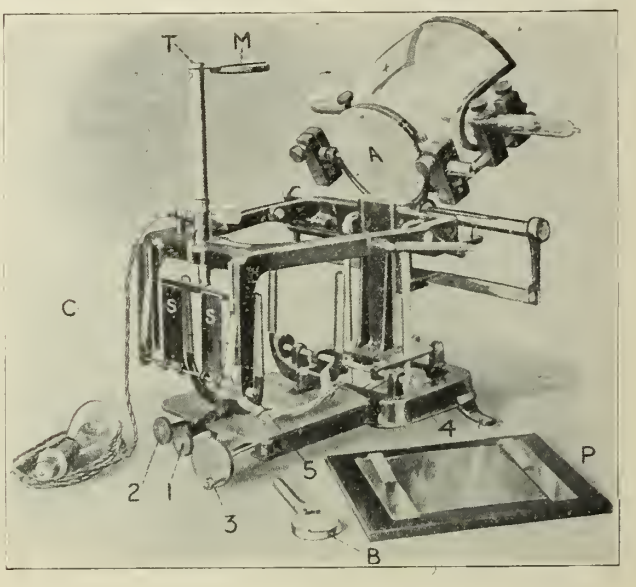


Fig. 2. The apparatus in position for taking the first radiogram.

operator of the necessity of taking measurements from the radiographs or of drawing any lines to represent the planes of shadow. In the new apparatus the tubeholder, indicating ball, and plateholder are on a movable stage, and therefore constantly preserve a known, unvarying re-

lation to each other. The angle of the rays with the eyeball and the distance of the tube from the plate are always the same, so that one indicator is sufficient. This consists of a small lead ball supported in a ring of transparent glass. The operation of placing this ball opposite the center of the cornea is accomplished by means of adjusting screws, conveniently placed on the frame of the instrument; the whole instrument, indicating ball, x-ray tube, and photographic plate, being moved together, their respective positions remain unaltered.

In many cases the injured eye is incapable of performing the function of sight, so that the optical axis must be maintained parallel to the plate by some means other than voluntary direction of the injured orbit. How this is accomplished is explained below in connection with the accompanying diagrammatic representation of the apparatus.

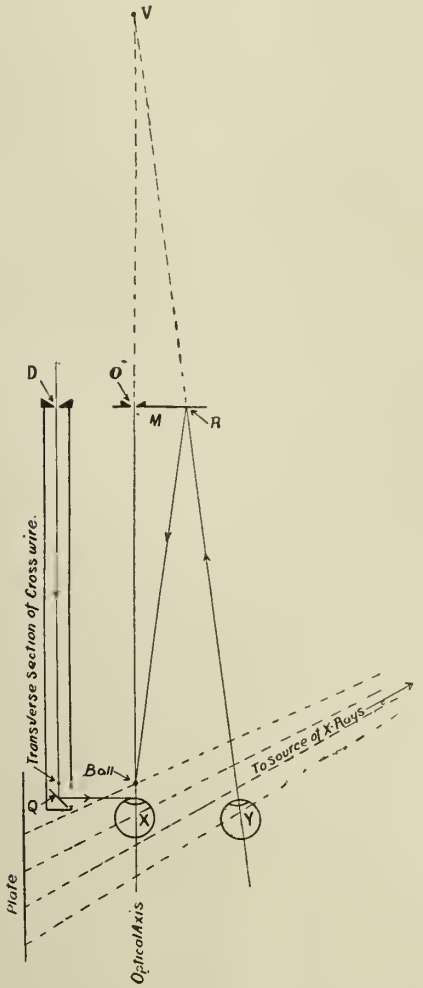


Fig. 3. Diagram of the optical system.

R (Fig. 3) is the point on the mirror (M, Figs. 2, 3; H, Fig. 1) at which the beam of light from the localization ball is subjected to reflection. Its image is reflected into the uninjured eye at Y (Fig. 3), and is seen as a virtual image at the point V (Fig. 3). The injured eye (X, Fig. 3) will therefore be in the correct position if the patient is made to look with the sound eye (Y, Fig. 3) at the reflection of the ball in the mirror (M, Figs. 2, 3; H, Fig. 1).

The operator looks through the aperture (O, Fig. 3), and adjusts the ball vertically over the center of the cornea of the injured eye while the patient is gazing at the reflection of the ball, or indicator. Parallelism is thus insured between the optical axis of the injured eye and the plane of the photographic plate.

In order to adjust the localizing ball exactly to a point 10 millimeters from the apex of the cornea, an ingenious optical method is employed, obviating the necessity of touching the cornea. A telescope with mirror and cross wire readily effects this adjustment. The mirror (Q, Fig. 3) gives an image of the cross wire and a lateral image of the cornea. Looking through the eyepiece, the operator adjusts the instrument until the image of the cross wire is in direct contact with the summit of the cornea. The indicating ball will then be found to be exactly 10 millimeters from the center of the cornea. A miniature incandescent lamp, mounted in an adjustable shade, illuminates the side of the nose of the patient, insuring the well-lighted background and distinct image of both cornea and cross wire.

By this method of adjustment little is left to the discretion of the operator, and results are therefore practically infallible. The variation of distance, due to parallax error, is only 1-10 millimeter. After adjustment, by instructing the patient to fix the image of the indicating ball in the mirror with the uninjured eye, any movement of the eyeball during exposure is prevented.

Since, even with unimpaired vision, it is difficult to gaze steadily at a specified object for any length of time without wavering, the shortest time possible should elapse between exposures. This necessity is foreseen in a new apparatus by providing for the recording of both exposures on the one plate. Thus the time needed for making the two radiographs is materially shortened, and the possibility of movement on the part of the patient, or misadjustment of apparatus in changing plates, is minimized. Metallic shutters protect such portions of the plate as are not to be exposed to the x-rays.

The tubeholder is provided with a heavy lead-glass shield. This lead-glass offers opacity to x-ray emanations, but is sufficiently transparent to the vision to permit the operator to readily observe the tube when illuminated. At a glance it can be ascertained whether the tube is working properly. The customary lead diaphragm is used.

The central orifice of the diaphragm is covered with a sheet of aluminum, offering little obstruction to the more penetrative rays, but filtering out the softer x-rays which would otherwise be absorbed by the skin, thus greatly lessening the possibility of unfavorable action on the patient. This also protects the eye against possible damage in the event of breakage of the tube.

That disease threatens to exterminate the native population of Alaska is declared by the governor of the territory, Hon. J. F. A. Strong, in an appeal to the Washington Government for medical relief. Although health conditions among the whites are generally excellent, disease, suffering, and death are everywhere apparent among the natives, and particularly so in the remote sections of southwestern Alaska and the eastern shore of Behring sea. In these sections, it is said, sanitation and hygiene are unknown. There are few physicians and practically no hospitals. Crippled children are numerous. Many children 4 or 5 years old—victims of disease, dirt, neglect, hunger, and cold—have not learned to walk. Tuberculosis is the principal affliction. The Government has provided schools, in which good work is being done, the teachers giving special attention to sanitation and hygiene, but according to Governor Strong medical care and attention are imperative. The establishment of well-equipped hospitals in places where they will serve the needs of the greatest number, the employment of physicians, the isolation of the infected, and the thorough education of the natives in hygiene and sanitation are the recommendations.

DEPARTMENT *of* NURSING

Mary M. Riddle, R. N., Editor,
Superintendent Newton Hospital, Newton Lower Falls, Newton, Mass.

Address to Massachusetts State Nurses' Association.

BY DR. WALTER P. BOWERS,
Secretary of Massachusetts State Board of Registration in Medicine and also for Nurses.

I am especially glad of an opportunity to address the Massachusetts State Nurses' Association, first, because of our common interest in all that pertains to the care of the sick, and, second, that I can here in this public way tell you that I have been inspired and helped by your profession in my work as a physician, and that my association with nurses has led me to admire women more and more; and now in these recent years the field has been broadening in which you and I can work for the elevation of the standards of a profession which is of such incalculable benefit to the human race. You are a part of the complicated machinery by which illness is prevented, suffering alleviated, and the dangers of disease minimized.

At a recent meeting of the Massachusetts Medical Society it was my privilege to emphasize the idea that the promotion of health, both public and individual, is one of the greatest problems of the present day, and an eminent clergyman took issue with that statement, claiming that the development of character exceeded in importance the value of improved health conditions. None of us would for a moment detract from the great work of the religious teacher, but we can see perhaps more clearly than the clergy that the sound body is a foundation for the sane mind, and one of the greatest helps in the development of character would be the elimination of disease with the degeneracy imposed on the race by faulty physical conditions. We can work with and for the clergy in presenting human material better fitted for the higher development of the spiritual nature. I have always contended that the sentimental, hysterical, and unstable mental conditions of the sick cannot be of any great value in leading to constructive moral development, and I firmly believe that sickness is an unmitigated curse, and the term "resignation" as applied to our misfortunes is a confession of weakness.

A sympathetic preacher once asked a bereaved husband if he was resigned, and the man answered in his broken German, "Mein Gott, I had to be." I say, let us not be resigned to the distress and disaster of disease, but let each failure to cure stir us to greater effort.

Your association is formed for the double purpose of bringing you together socially and to develop greater efficiency. The social element is universally recognized as an essential feature of human effort. We have to know each other in order to work together to the best advantage, and, as we come to know each other, the irritations engendered by mischiefmakers fades away; and whereas, working apart, we may be suspicious of one another, when we come to discuss questions of policy we often find that the opinion and experience of some other mind modifies our views and attitudes.

Perhaps you will pardon me if, from my position, hearing different people and seeing both sides of the shield, I offer a friendly criticism. You have as a requisite for membership certain provisions which seem to be a barrier to the admission to your association of graduates of a certain school. When I say this, you will perhaps hold up your hands in protest, but the fact remains that certain applicants for admission into this most estimable and useful organization have not received notice of acceptance or rejection, and this has led to a certain feeling of irritation and opposition to your work.

Referring to medical politics, it may be well to call to your mind a condition which, most of you know, existed several years ago when members of the Massachusetts Medical Society were disciplined for consulting with homeopaths, and some of the great men in medicine fought the homeopaths most bitterly. Even the gentle, public-spirited, and noble-minded Holmes went about lecturing on the follies of this belief, but he accomplished nothing more than to amuse his hearers and inspire the adherents of this theory to a more active propaganda. All adherents of the homeopathic practice were then denied admission to the Massachusetts Medical Society.

After a time men began to suspect that names count for little, and that a man with a scientific mind might adopt a banner different from that employed by the majority; and when men came to be regarded for what they really were and not so much for the title assumed, then that great body, one of the oldest medical organizations in this country, tore down the barrier and said, "all that we require of our members is that they shall be men who have had the proper education to profitably associate with us, and are honestly working for the advancement of rational medicine," so that today a man may graduate from a homeopathic school and yet be a member of the Massachusetts Medical Society. So here and now I ask you to study this question, and decide if you cannot simply determine whether a certain nurses' training school does fit a nurse so that she can successfully meet the requirements of your profession, and, if so, why not receive her with open arms? In other words, avoid all sectarianism and accept all well-qualified graduate nurses. There are plenty of things to fight, and the most united effort will be done too much to overcome them.

I want to call your attention to our defective law which was enacted in 1910. Some of you do not like that law; some of you have felt doubtful about registering under it, and I sympathize with that feeling. But it is a foundation on which we hope to build a better one, and, if it can be made better, I think you will all indorse it.

While many of you contend that a nurse's duty consists in first making herself well equipped for her work and then doing faithfully all that comes to her, it would be well for us all to develop the feeling of responsibility about all matters of public policy which your work fits you to intelligently consider.

Women are entering into the larger affairs of life, and, where they show ability, are crowding the men hard. They are demanding recognition for themselves and their views. They are serving on boards and commissions, and we men are getting ready to conclude that we cannot get along without you in many phases of public life. We are glad to acknowledge your persuasiveness and your persistence. The progress you have made in the cause of equal suffrage, the wonderful uplift in civic affairs brought about by women's clubs, bear eloquent testimony to the results of

your efforts, so that there is every reason why every nurse should study the questions relating to her legal status and be a part of the movement to improve the standing of her profession. The responsibility for action rests on those who know the need of better conditions. The people must be taught.

You may agree with me that the mentality of the average legislator is such that he may not comprehend your plan or even understand your motives, but, when this large and influential body of earnest women gets thoroughly aroused to the discreditable situation and will start a campaign with the understanding that it may be for years, but that they are united and determined to win because they know they are right, sooner or later I predict success. Even though the triumph may be delayed beyond my active working days, it will be a source of pride that I was privileged to be with you in the beginning.

Let us for a moment consider some details of this registration law. There is one unnecessary provision in the law where it says that the fifth member of the board shall be a physician who is a superintendent of a hospital having a training school for nurses. Some bills are said to have jokers in them, and when I read this I couldn't help being reminded of the old saying, "as useless as a fifth wheel to a coach." Don't misunderstand me, for I do not in any way use this association of the word "fifth member" with the fifth wheel of the coach as any way applying to the worthy and eminent man who is appointed under this specification. He is a most useful and devoted member of the board, but my contention is that the provision that he must be a physician is wholly unnecessary, and I am suspicious that this clause was inserted because some doctors were afraid to have you nurses given too much authority or too much freedom. There may have been an unfounded doubt regarding your ability to regulate these matters. Doctors have always wanted to keep you under their thumbs in a way, you know.

I have no objection to a doctor being appointed if he is competent to deal with all the problems of nursing, but all superintendents of hospitals who may happen to be doctors do not keep actively in touch with nursing problems. Nursing is becoming more and more a profession of great dignity, and to a very large extent the interest of the nursing profession can be safely left to the well-educated and competent women who direct the policies of this calling. The association of this board with the board of registration in medicine is a useful and workable plan in the early stages of the scheme, but some day it may properly become a department under the State Board of Health. This also, in my opinion, applies to the Board of Registration in Medicine.

Section 11 should be changed so that no person should be allowed to do this work in Massachusetts without some sort of registration. My feeling is that there should be two classes of nurses registered—those who can meet the full requirements of the board, and another registration for honest people of limited attainments who could fill only certain positions. I am opposed to the practice of allowing the so-called practical nurse to work without any kind of registration and without any legal obligations or supervision.

The present plan leaves her perfectly free to do any work, assume any responsibility, make any claim for herself that she may wish, so long as she does not claim to be a registered nurse or use the title R. N. This is all wrong, for this law is designed to protect the public under the police power of the state, and it leaves it optional whether good nurses shall register or not, and leaves poor ones entirely outside of any scheme of supervision or regulation. The state of Massachusetts won't even allow a plumber to work in your house until he has been registered after an examination, but it will allow unregistered nurses to care for cases of pneumonia or typhoid fever, diseases in which there is the possibility of sudden and dangerous developments, calling for judgment and technical skill in applying physicians' orders. I would feel sorry for anyone who had to rely on an untrained nurse about the sixth day of a pneumonia case, and just at that moment I would prefer to take my chances with an unregistered plumber in dealing with a defective sewer pipe.

The final solution of the problem should result in the regulation of two classes of nurses—one class of fully qualified nurses, with authority to enter on the responsibilities of any case, and the other of nursing attendants, or with some other easily understood designation, who can care for only chronic or comparatively simple disorders.

There is at the present time an analogous scheme being thought out in medicine which would provide that only those registered physicians who had subjected themselves to further technical examinations should be allowed to do major surgical operations, thereby making two classes of registered doctors. Those of you who have watched the abortive attempts of untrained men to do surgical work can readily see the wisdom of this.

With all these plans we must fully realize that the purpose of these laws is not to benefit us, but only to make us of greater service to the people, and it is only on that ground that we can confidently go before the legislators and hope that they will make laws in response to our recommendations.

Now I come to the most vital part of our defective law, which is the bone of contention both among our friends and our enemies. Some of our friends do not agree with us in our effort to try to amend this section, and our enemies use this as a weapon with which to defeat us. Reference is made to the fact that the Board of Registration of Nurses under our present law has to examine every applicant who is assumed to be of good moral character, is 21 years of age, and who pays a fee of $5. Pending the development of a comprehensive law which provides for two classes, we want that law changed so that we shall examine only graduates of training schools, and furthermore that these training schools shall meet the requirements of your State Board of Registration. For the purpose of determining the standing of these training schools, the defeated bill of last winter specified that the board shall have authority to investigate at any time the training schools for nurses in this commonwealth for the purpose of determining their fitness and efficiency as shown by their general equipment, by the character, the methods, and the extent of the instruction given therein. Such investigations shall be made by a person legally entitled to R. N., and who is a graduate of a training school for nurses connected with a hospital of at least 50 beds and which gives a course of instruction in the art of nursing covering a period of not less than two years.

We wanted that because it is the only way whereby we can prevent the graduates of poor schools from standing on an equality with those from good schools, and also is the only way of doing away with registering of nongraduates.

Our opponents did not want it because some felt it was aimed at certain schools, some because they did not want to eliminate the nongraduate, some because they did not want the inspection to be done only by a graduate of a school having 50 beds, some because they did not want the

low-grade school put out of business, and some because they did not want the principle of state inspection of educational institutions to become an accepted policy. All the objections were based on selfish motives. All the arguments in favor were based on better service to the public. Self-interest prevailed, and Massachusetts is still left to the ignominious position of being one of the backward states in dealing with the care of her sick and injured, and in meeting the problem of the medical needs of her population.

We could tell you of the effort we made, how we sent literature to every member of the Legislature, and then found that practically no legislator took the trouble to inform himself of the merits of the case; how one of our own board was led to come out in opposition to the rest; how we attended hearings and had eminent talent from other states to help us, and how it became evident that our representatives in the general court were incapable of seeing the real value of the measure and refused to give it serious consideration. It may be we shall have to wait for a new generation to grow up, and, if so, please begin a campaign of education with your nephews, who are to be the coming lawmakers, and try to instill into their minds a little courage and common sense and a feeling of responsibility for their fellow-creatures.

Remember that no great reforms ever come except through long and patient effort. That the men and women who think clearly, follow paths of duty, suffer through criticism and even persecution, by steadfastly fighting for high ideals, have won out.

Remember the women of your guild who have met every rebuff, have suffered physical pain and weariness, have denied themselves the comforts of life that they might lay the foundation of better service for their fellow-creatures, and who now stand enrolled as the great benefactors of mankind.

As you recall these noble women, there will come into your hearts, I am sure, a desire to be something more than a mere breadwinner, and to take your place as an influential factor in the elevation of a service which is now recognized as an essential feature of the scheme of better living.

The American Society of Superintendents of Training Schools for Nurses.[1]

BY MARY M. RIDDLE.

The year 1893 was a momentous one for this vast and wonderful country of ours in that it showed to the world in the great exposition at Chicago, known as the World's Fair, the progress made in recent years within our own land as well as that made by other countries in the arts and sciences, in commerce and manufactures, in education and philanthropy, and in general uplift and civilization.

It proved to be the meeting place of various congresses and conferences for the study and prevention of ills as well as for the quickening of impulses for the betterment of mankind. Among many others, there was held an international congress of charities, correction, and philanthropy, with a section on the hospital care of the sick, training of nurses, dispensary work, and first aid to the injured, and a subsection on nursing.

The idea of having a subsection on nursing is said to have originated with Mrs. Bedford Fenwick, of London, at present editor of the *British Journal of Nursing*. Alawys progressive and, if need be, aggressive for the cause of education for nurses, Mrs. Fenwick made the suggestion, which was favorably received by the organizers of the congress, and Dr. John S. Billings, of Washington, the chairman of the section, gave it his cordial support, appointing as chairman Miss Isabel A. Hampton, afterward Mrs. Isabel Hampton Robb, superintendent of nurses and principal of the training school for nurses at Johns Hopkins Hospital. Miss Hampton took part in one of the general sessions of the congress and read a paper on "Educational Standards for Nurses."

Other women spoke clearly and fearlessly of existing evils or of prospects for the future, but in each instance gave evidence of an ethical training and a mind disposed to be loyal to any higher authority. There were sessions where members of the subsection met with the hospital section and others where they met by themselves for freer discussion and counsel. It was an opportunity not hitherto enjoyed by nurses in this country, and they made the most of it. Papers were written and read by them showing they had the same problems, many of which are being studied at the present time and some of which still stubbornly remain unsolved.

The nurses present were earnest, thoughtful women at the head of important schools in this country and Canada, or they represented district nursing bodies (not so well known then), or they were missionary nurses, all having the courage of their convictions.

In the light of developments of recent years, Miss Hampton spoke with the gift of prophecy, for from her paper we get our first intimations of a three-year course, of an eight-hour system, and of possible affiliations of the larger schools with the smaller ones, for she says, "In considering standards of education for nurses, we must not overlook the smaller hospitals, cottage hospitals, etc., for they have their work to do as well as the large institutions, but that they are in no position to offer adequate teaching or experience to a woman who would become a thorough nurse is very evident. How, then, can we meet the problem of supplying good nursing and at the same time making good nurses? It can be met only by the larger schools entering into arrangements with the smaller schools to supplement their teaching."

She spoke also of the qualifications which should be possessed by the young women presenting themselves to be taught nursing. Today the superintendent talks about the same conditions as entrance requirements, and is praised or blamed according to the opinions of the onlooker, who is quite likely to be without the slightest knowledge of the subject. She presented for the first time in public in this country the idea of a three-year course for nurses in connection with the eight-hour system.

Florence Nightingale, too, wrote for the conference, though not present. She said in part, "Nursing proper can be taught only by the patient's bedside and in the sick room or ward. Neither can it be taught by books, though these are valuable accessories if used as such; otherwise what is in the book stays in the book." And, again, "What is training? Training is to teach the nurse to help the patient to live. Nursing the sick is an art, and an art requiring an organized, practical, and scientific training, for nursing is the skilled servant of medicine, surgery, and hygiene. A good nurse of twenty years ago had not to do the twentieth part of what she is required by her physician or surgeon to do now. The physician prescribes for supplying the vital force, but the nurse supplies it."

Miss Dock discussed the "Relation of Training Schools

[1]The idea of presenting a history of the work and growth of this dignified and useful body grew out of the lack of knowledge of its existence, manifested by the trend of discussion and remarks in private conversation at the meeting of the American Hospital Association at St. Paul in 1914. For the facts herein related of the very earliest history the writer has been obliged to consult the annual reports of the association, as well as the Transactions of Section III of International Congress of Charities, Correction, and Philanthropy, held in Chicago, June 12 to 17, 1893.

to Hospitals." She said, and truly, that which it is well for the hospital to remember when pluming itself on what is accomplished for it by its training school, "The training school idea did not originate within the hospital, but was grafted on it by the efforts of a few inspired ones outside, who saw the terrible need of the sick, who knew the inadequacy of the care they received, and who bravely knocked at the hospital doors, first closed, but gradually opening more and more widely. The first attitude of the school was, therefore, that of an applicant and its work experimental. After a few years' trial it has so well proved itself that the hospital is now the one to hold out inducements. On the internal dissensions that sometimes mar the relations of the training school and hospital, there are, broadly speaking, two sources—one is a week government of the school itself, the other is the failure to separate clearly the medical and the nursing provinces. On one field only does the school properly come under the command of the medical profession, and that is in the direct care of the sick. Here, indeed, the command is absolute. The whole purpose of the school centers around this point, and the pride of the well-drilled nurse is to make this service perfect."

A short survey of the nursing status and the conditions leading thereto in England was given by the Hon. Mrs. Stuart Wortley. Her paper was largely historical, but it must also have been inspiring, for it recorded the efforts of devoted women, whether in civil or military hospitals, in cottage hospitals or the vast ones under municipal control, whether in epidemics or in times of quiet routine service.

We might go on down through the program of that first convention of nurses, finding that it was really international, for there were messages from many parts of our own country, from Great Britain and countries on the continent of Europe, and even from Japan, which was then, in a sense, more distant than it is today.

Almost every phase of hospital work was discussed, but we are especially interested in those which outlined possibilities for national organizations of nurses, and we find in all instances that the promoters spared neither their time nor their strength, but gave unstintedly, having as their avowed purposes, expressed in their own language, "to advance the standing and best interests of nurses, to cooperate with them, and to place the profession of nursing on the highest plane attainable.

With this as their motto, they decided not to fall backward, but to continue and increase their knowledge of each other and the work of nursing by the formation of an association of superintendents of training schools, and we are told that the idea was so cordially received by those to whom it was presented that one of the superintendents of a Chicago school invited those present to meet in her sitting room to talk it over, with the result that the next day saw the beginning of the society long known as the American Society of Superintendents of Training Schools for Nurses, having as objects (1) to promote fellowship of members, (2) to establish and maintain a universal standard of training, (3) to further the best interests of the nursing profession.

This was the beginning of the preliminary organization which decided to call a convention of training school superintendents to be held January 10, 1894, in New York, and which elected as president Miss Alston, Mt. Sinai Training School, New York; first vice-president, Miss Davis; second vice-president, Miss Palmer; secretary, Miss Darche; and treasurer, Miss Drown, Boston City Hospital. There were some committees appointed and the meeting adjourned.

The first meeting of the convention was held in the Academy of Medicine, New York City, at 10 a. m., January 10, 1894. There were forty-four superintendents present, and Miss Alston conducted the meetings. The number present represented a large gathering, inasmuch as the great body of superintendents were at that time unknown to each other.

They were called on to mourn the loss of Miss Katherine L. Lett, one of the original promoters of the society, who passed away the previous November.

They had some substantial encouragement, notably that given by Miss Perkins, a retired superintendent of the school at Bellevue Hospital, New York City. Miss Perkins believed in the movement, even though she could not, by reason of the proposed constitution, become a member, she not being a trained nurse. She says in a letter to the Secretary: "Though a superintendent of the Bellevue Hospital for twelve years, I am not a graduate of any school. My assistant has always been a graduate, fully competent to give theoretical and practical instruction to the nurses, and on me, with the advice and assistance of the managers, devolved the executive work of the school. Under this arrangement the school increased and prospered, but it should not be considered a precedent, as the circumstances which rendered my appointment necessary at the time cannot probably occur again, and I entirely approve of the resolution that a superintendent should be a graduate of a training school of good reputation."

The committee previously appointed for the purpose presented this report, and a constitution and by-laws were formally adopted. The objects of the society, as laid down in the constitution, do not differ materially from those previously mentioned, though perhaps a little more comprehensive.

The article on membership is particularly interesting, and specifies:

There shall be four classes of members: (1) active members, who shall be superintendents of training schools for nurses, resident in the United States and British America; (2) associate members; (3) honorary members, and (4) corresponding members.

The active members shall be graduates, in good and regular standing, from training schools giving not less than a two-year course of instruction, and must be past or present superintendents of training schools connected with incorporated and well-organized general hospitals.

Associate members were assistants to superintendents who had served two years in such capacity and were also graduates of schools like those from which the active members graduated. They were members only during such service.

Papers were read and discussed, and those calling for the most discussion and the greatest difference of opinion were on lengthening the course to three years and a non-payment system for pupils in training.

Again the subject of alumnæ associations for nurses received a share of attention.

The society enjoyed some pleasant social functions in New York City.

After the election of officers, when Miss Linda Richards was chosen president for the ensuing year, the convention adjourned to meet in Boston in February, 1895.

"To simplify procedure, to abolish divided responsibility, to define clearly the duties of each head of a department and of each class of office—to hold heads responsible for their respective departments, is necessary for success in hospital work."—Cook's Life of Florence Nightingale.

FASHION—THE MOLOCH OF WOMAN'S HEALTH, COMFORT, AND HAPPINESS.

Sensitive Nature of Woman Violated by the God Fashion—Men Are Left to Nature—Corsets, Collars, and Shoes Woman's Undoing—Doctors and Nurses Should Help Mold Proper Styles.

BY HOWARD MOORE, M. D., F. A. C. S.,
Orthopedic Surgeon to Newton Hospital; Assistant Orthopedic Surgeon Massachusetts Homeopathic Hospital; Instructor in Orthopedic Surgery Boston University School of Medicine.

Fashion in the clothing of men, women, and children might easily be accorded a high place as a factor in preventive medicine. If the clothing is sane and sanitary, good health should be greatly aided; but if the fashion should happen to be hysterical and accentuated in any one direction, the health of a whole generation, or even of a whole race, might be unfavorably affected.

If the modern hospital, and what it stands for, is to blaze the way for the future of all our people in the things that go to make up health and comfort and happiness, the doctor and the nurse must do their part to bring our ways of living, our habits and customs and fashions, back to the simple ways—ways that at the least will not outrage nature.

It is something of a mystery, yet nevertheless a fact, that Fashion has seemed to decree regarding the garments of men a fairly healthful and sensible manner of dress, but, regarding the dress of women, Fashion seems to have done about all she could to the contrary. To be sure, styles change markedly in men's dress, and certain changes reflect discredit on the sterner sex, but for the most part the changes are not such as materially interfere with the body as a machine. On the other hand, it does not seem to matter to Fashion what shape God intended woman to have; one season the waistline will be high, the next it may be low, and the following season there may be no waistline at all. Then big hips and a small waist may be the thing, and, again, the following year the proportion may be reversed; so we hear from season to season about straight fronts, high busts, low busts, hips and hipless, the military posture, the New York slouch, etc.

Dress, instead of being fitted to the form, demands that the form shall suit itself to the varying styles of dress. As the hermit crab selects the shell of a whelk and grows to its shape, so does woman grow with the fashion; but, no sooner has she acquired the desired form than Fashion demands another, so that it is surprising that the antique girl of many periods does not exhibit a well-turned body resembling a corkscrew.

"Tainted to the core with vanity and as ignorant of all that it were better for them to know, dissatisfied with themselves as God made them, think to amend His work by the devices of French artists or their imitators, who dare in their specious glossing venality to impugn, as it were, the very relation of the Creator and His creation, professing to know far better than Nature how the form of woman should be made, yet, far from making them better things than women, they transform them into far less natural creatures than monkeys."

So, therefore, the American woman has come to be a type which differs widely from the savage woman, who wears no clothes, or, if any, such is in no way limit natural functions of the entire body. High, tight collars have produced a long, slender neck, angular at the base; the shoulders droop from the weight of clothes; respiration has been changed; the waist has been made smaller and the hips larger, and even the curves of the spine altered by the corset; and last, but by no means least, the mechanism of the feet has been so altered by shoes, and their function so perverted, that the carriage and gait have become awkward and unnatural (Fig. 1).

Ninety-nine percent of the women who change their style of dress from season to season do so for no other reason than that they wish to follow Fashion's dictates. A woman will make herself appear not only ludicrous, but hideous, by dressing in clothes which are in no sense becoming, if she can but be in style.

Now, the practical point of this message is just this: the human machine may be safely covered up with as varied styles of dress as one can conceive if the dress does not change the form or otherwise interfere with the normal working of the machine. A skirt may be full one year and tight the next, or the sleeves may be tight one season and full either at the top or bottom the following year, and so on, but damage must result if the variations in dress are such as materially change the form of the body or interfere with its normal working.

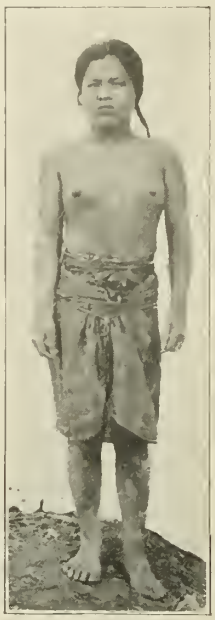


Fig. 1.

Fig. 2.

It has been demonstrated beyond the slightest question that not only does the body depend for its greatest efficiency on normal form and posture, but also all of its vital organs are dependent for their support and their best function on the same thing. It must be apparent, therefore, what great danger lies in some of the tremendous changes that have been made in the styles of woman's dress within the recollection of even the younger generation.

It is interesting to note that, while woman uses these elements of dress for the purpose of adding to her attractiveness, as a matter of fact the result is exactly the opposite of this. The collar tends to cause the disappearance of the subcutaneous adipose tissue which gives the neck its smoothness of contour, leaving it long, scrawny, and angular. A well-fitting corset may produce a straight front, but it so weakens the abdominal muscles designed to do this very thing, if given half a chance, that when the corset is removed, the abdomen bulges out (Figs. 13, 14).

Woman wears a shoe shaped not at all like the foot, and very much too small, because she wishes her foot to appear neat and small; but such a shoe is tending all the time to relax the structures in that foot, which will allow

it to spread out; it is tending all the time to so alter the circulation that puffiness and swelling will result; and it is so altering the form and mechanism of the foot that a natural and graceful gait or posture will be impossible. Compare the gait of a child in bare feet with that of a woman wearing tight, pointed, high-heeled shoes. The foot was designed for service—not as an ornament. But,

Fig. 3.

still, is not the foot of a child a more beautiful thing than that of a woman, when the latter possesses, say, a puffiness around the ankle, a turning outward of the great toe, with a large, inflamed bunion, and a corn on the dorsum of each toe?

These elements of dress being, however, for a time at least, necessary evils, the questions to be answered are

Fig. 4.

what types had best be worn, and what can be done to offset the disastrous effects produced by their use. The present manner of dress has been handed down through generations, with changes only in the style of the garments—not in the essential principles of the dress; so that to attempt to change it in any radical way would be like attempting to change the leopard's spots. Only by universal education can the desired change in dress be brought about. When all women, instead of a few, know how artificial many of them are, *then only* will the style be changed. There is at present progress being made in the right direction, but too slowly, as will be shown.

There are other elements in woman's dress which are physiologically not good; but the collar, corset, and shoe are the most far-reaching in their consequences, and it is against them that special attention will be directed.

Fig. 2 is a caricature representing the god Fashion smiling on his victim, because he knows what he is doing to the poor thing, if she doesn't know herself. Fig. 3 represents some of the marked changes that have been made in dress in the last fifty years, beginning with the hoop skirt, then the atrocious bustle, the balloon sleeves, the hourglass corset, and the popular tailor-made girl.

There are doubtless many women who would deny that any possible harm could result from a collar; there are probably few who ever thought of any effect. A great

Fig. 5.

many things do, however, result from this member of woman's dress. If a woman is asked why she wears a high collar, she will almost invariably give one of the four following answers: first, it dresses the neck, adding to its attractiveness; second, it serves to cover her neck, which is not considered beautiful; third, it is a protection; fourth, Fashion says I must. Certain it is, however, that no collar is more attractive than a well-shaped, beautiful neck, nor is it essential that it be anything but large enough, low enough, and flexible enough for absolute comfort to answer the last three arguments. If a comparison is made between Figs. 4 and 5, it must be apparent that not only is the appearance of the wearer equally good without the high collar, but her comfort and her efficiency must be greater without that handicap.

It is a regrettable fact that certain occupations, by custom or otherwise, require the wearing of a collar which interferes materially with the efficiency as well as the

comfort of the wearer. This reference is made principally to the collar worn by nurses. Nurses' work is hard work, and work which requires more or less freedom of action of the body. It is oftentimes pitiable to see a nurse who has had a hard day's work bending over a patient with face reddened and congested, due to almost nothing but the collar. The writer realizes the difficulties that stand in the way of a material change in this respect. The uniform is more or less sacred, and by custom a collar seems a necessary thing. Then, too, it is not always possible to find a manufacturer on whom one can depend to supply a certain collar if the style changes during the next season. This is a field, however, to which a great deal of attention should be directed, and, if possible, a collar designed and adopted which will not only be more comfortable for the wearer, but more hygienic. The regulation collar which is worn in the training school at the Newton Hospital and the kerchief which is worn during the warm weather are shown in Figs. 6 and 7. Does not the ap-

Fig. 6.

pearance of the girl in Fig. 7 suggest a finer spirit and likelihood of greater possibilities for efficient service and without the suggestion of lack of dignity? Now, with regard to dignity—can there not be as much dignity in dress appropriate for service as in a dress of fashion or custom?

A collar which is stiff, tight, and high weakens the muscles of the neck, accounting for many of the lame necks complained of; it tends to interfere with the return flow of blood from the head, which means passive congestion, and accounts for many of the chronic headaches from which women suffer; it interferes with local circulation, tending to a lessened resistance and increased tendency to contracting of colds and sore throats; it destroys the subcutaneous adipose tissue, which is the protection Nature supplies and which gives the neck its smoothness of contour and beauty.

The so-called Dutch collars are ideal in that they give Nature a chance, and are at the same time attractive (Fig. 8). But if a woman fears a possible draft on the back of her neck, or if she considers her neck not sufficiently beautiful to have it exposed, or if she feels that she will not be considered well-dressed unless she listens

Fig. 7.

to the dictates of Fashion—which says that high collars shall be worn—then let her put on a collar which will cover her neck. But don't put a size 12 on a 13 neck. Don't put a collar 3 inches high on a neck which is only 2½ inches long; don't have it so stiff that no motion will be allowed in the neck, unless there be a pathological condition in the neck which demands the use of a splint.

Fig. 8.

The performance of the functions of the thoracic, abdominal, and pelvic viscera depend largely on normal posture, freedom of expansion of the thorax, the proper action of the diaphragm, freedom of motion in the lower spine, tone and strength in the abdominal muscles, and

freedom from constriction about the waist; every one of these is interfered with to a greater or less extent by the corset.

Recently it has been learned that many of the rheumatisms, those caused by autointoxication from fermentative processes in the alimentary canal, are due to stomach ptosis. When the posture is altered, and the abdominal

Fig. 9.

wall has become weakened and the stomach has lost part of its support, it begins to settle down lower in the abdomen than is normal, and, because the duodenum is fixed, there is formed a pocket in which the half-digested food remains, ferments, and causes finally autointoxication.

Normally, the abdominal cavity is barrel-shaped, and

Fig. 10.

its upper boundary is higher than is usually realized, coming almost to the nipple line. Its greatest lateral diameter is at the level of the lower ribs. The upper part of this cavity is filled solid full of large, vital organs—namely, the liver, stomach, pancreas, spleen, and directly below these are the kidneys and small intestines. When a corset is put on which reduces the size of the waist and compresses the cavity at the level of the lower ribs, these organs must be pushed from their normal positions, and this, of course, cannot take place without the position and support of the contiguous organs also being disturbed. To these effects of the corsets we can add interference with grace, sacro-iliac weaknesses, postural back strain, pendulous abdomen, and abnormally large hips.

Fig. 9 shows Venus de Milo, whose torso has been considered by most authorities as being ideally proportioned, and some of the modern attempts to improve on the figure. Fig. 10 illustrates a number of models of corsets in style during the season of 1912, and a comparison of these with Fig. 11, which is a group of models in style during 1913, shows the marked change in form to which the body was made to adapt itself during the short space of one year. While the models of 1913 were better in many respects, indications at the present time point to a return of the smaller waists in the very near future. Fig. 12 illustrates some of the attitudes which have been taught by dressmaking establishments because it was felt that they

Fig. 11.

Fig. 12.

produced a better effect as regards the appearance of the gowns. Is this a great step forward in civilization from the distortion of the feet which was practiced by Chinese women, and which is now looked on as most heathenish? Certain it is that such variations from the normal with respect to posture lead to far more serious disturbances in the efficiency of the individual as a machine than the distortion of the feet which the Chinese women practiced.

It is hardly possible to design a corset which will maintain normal posture, which will allow full expansion of the chest, which will support the bust and abdomen, and allow perfect freedom of motion in the entire spine, and at the same time allow an appearance of being well dressed, as the term must be used, but it is very simple to design one which is very much superior, both as regards hygiene and appearance, than is being worn by the majority of women today.

[To be continued.]

With the exception—if it is an exception—that hospitals can best cope with emergency cases, the prime reason for sending a patient to the hospital is that he may have good nursing.—New York Medical Journal.

QUERIES *and* ANSWERS

Fireless Cookers for Hospitals.

To the Editor of THE MODERN HOSPITAL:

Is it advisable to use fireless cookers for the preparation of food for hospital patients? We are thinking of buying one, and would like to know the experience of others and something about the scientific side of the subject.

H. T. B., New York.

There is no doubt that fireless cookers will prepare some items of hospital food better than they can be prepared in any other way; for instance, the cereals. There is no doubt that also meats cook tenderer in fireless cookers than otherwise, and also vegetables; indeed, almost everything that is cooked would be better, especially for sick people, if it were cooked under the slow, low temperature conditions of the fireless cooker. You should get one, but get a good one and one that will cook several articles in it at one time, and get it of metal and not of wood.

The subject of fireless cookers is a very important one; so much so, indeed, that THE MODERN HOSPITAL has now in course of preparation a series of articles on the use of the fireless cooker, by one who knows all about the fireless cooker in theory as well as in practice. These articles will begin to run in February or March, and it is intended that they shall cover, not only the theory and practice of fireless cooking, but a great number of recipes and detailed directions for the cooking of various articles.

North Light for Hospitals.

To the Editor of THE MODERN HOSPITAL:

Is it absolutely necessary to have north light for operating rooms? Our surgeons say it is, and, as we are building, we would like to have this matter settled authoritatively. We have all agreed to refer it to THE MODERN HOSPITAL. A SUPERINTENDENT, Ohio.

North light is very highly desirable, and is a good thing to have. Laboratory men think they really must have a north light to do daylight microscopy, but, as a matter of fact, excellent work is done with light from other directions. I think surgeons are really exaggerating the desirability of north light. There are other factors in the location of the operating rooms that are very much more important, as, for instance, the conveniences of administration, so that the various details of the operating suite shall be in such relation to each other that the department can be economically handled; and, again, there may be room enough at a north end for only one operating room, and it would be very much better to have the second operating room fronting to the east or west, or even to the south, than to have the second operating room on another floor. Suppose, for instance, we are to have two operating rooms, and we have room enough for only one at the north, but there is space for a second room to face to the east immediately adjoining the first room. There could be a top light for the second room, and a shade could be employed to shut out the sun in the case of early morning operating; and, if the second room were on the west, the shade could be employed to shut out the afternoon sun, and the light from overhead would be abundant. So many things can be done with shades and with overhead lighting that there should be no difficulty about getting what your surgeons need without sacrificing the economic administrative necessities of your department. A good deal of the demand for north light by surgeons is due to an almost unbroken precedent.

Location of Operating Room.

To the Editor of THE MODERN HOSPITAL:

Our nose and throat surgeons insist that their operating room must be in close proximity to the nose and throat wards because of the danger of tonsillectomies bleeding on their way back to bed. The other surgeons think there is less reason why the nose and throat cases should be near the operating room than that laparotomies should be so situated. What does THE MODERN HOSPITAL think about this? D. W. T., West Virginia.

It has been only a few years since tonsils were removed in out-patient departments and dispensaries, and patients were permitted to go home after one or two hours' rest. Undoubtedly the practice still obtains in many dispensaries. It is wrong, of course, because tonsils do bleed sometimes severely and often dangerously, but they very rarely bleed badly at once, and in most cases severe bleeding does not occur for several hours after operation. The practice of removing tonsils in dispensaries has been discontinued in most dispensaries and out-patient departments because there were so many patients that started up a hemorrhage hours after going home. There is no reason why a nose and throat operating room should be located nearby the wards to which patients are sent afterward. There are far more reasons why laparotomies should not be moved far than there are in the case of tonsils, or any other nose and throat operations. As a matter of fact, the question of distance from the operating room is exaggerated by most persons. It really does not make so much difference whether a patient goes 30 feet or 300, or whether he must be taken down an elevator and across two corridors, or whether he must be taken down one elevator and along a corridor and up another elevator. The main thing is that patients during removal should be handled very carefully. They are asleep, and should be moved by an orderly, accompanied by a nurse and one of the house doctors, who can take every precaution along the way to see that patients reach their beds in good shape. It is very much more urgent that patients shall be comfortably and conveniently located after they reach their beds than it is that they should reach them in a hurry. For the same reason, recovery rooms adjoining the operating suite are worse than useless. Usually patients remain in these rooms until they entirely recover from the anesthetic, and are sore in every part of the body, generally weak and often nauseated; then it is a serious thing to move them. For that reason they should be taken at once from the operating table and put to bed where they are going to remain.

Proportionate Cost of Equipment.

To the Editor of THE MODERN HOSPITAL:

Will you please tell me what proportion of the cost of construction of an average hospital should be allowed for equipment? Does equipment include laundry machinery, lighting fixtures, steam sterilizing apparatus, and cooking apparatus? HOSPITAL ADMINISTRATOR.

By equipment we mean the portable things—furniture, dishes, linens, cooking and nursing utensils, garbage cans, wheel carts, shades, and the thousand and one things that must be bought and put in after the architect gets out, if he ever does get out until you throw him out. Laundry

machinery, sterilizers, and such cooking apparatus as the range, boilers, toasters, steam tables for serving rooms as well as kitchens, whatever ventilating plant is put in, the plumbing, steam fitting, radiators, and the power plant, are what we call permanent installation—that is, they are integral parts of the building and are counted in as part of the architecture. We can give some proportions of cost of some of this permanent installation in percentages. For instance, let us take a $100,000 hospital: a fair average price per cubic foot of the space occupied, including foundations, would be about 32 or 33 cents, and that would include all this permanent installation. In such a building the plumbing, including enameled iron fixtures, would cost 2½ cents. If the building is very small, the cost would probably go to 3 cents.

A low-pressure vacuum steam-heating system, including steam for the laundry, cooking, sterilizing, including also the high-pressure boilers, would cost about 2½ cents.

The electric wiring, signaling system, telephone installation, etc., would cost less than 1 cent.

In such a building as we are thinking about, the sterilizing apparatus, including water, dressing, utensil, and instrument sterilizers, would cost about $1,500.

A five-ton refrigerating and ice-making plant would cost about $3,000, and an installation for refrigerated drinking water would cost about $1,200, and perhaps $300 would have to be added to this if cold water drinking fountains are placed in the wards.

The expense of the movable things which we call equipment can be made anything you choose, but you will be safe in figuring on a basis of about $200 per patient to get the very best results. For instance, if your hospital has a capacity of 100 beds, if you can afford to spend $15,000 or $20,000 on your equipment, you will make money in the long run. This would give you a large quantity of linens—for instance, sheetings, blanketings, a great quantity of dishes, and other supplies that can be bought in large quantities at far lower price than if you bought in small quantities; and, of course, this amount of money would carry you along in the operations of your hospital over a good long period of time. Some of the best housekeepers in the country say that bed linens get "tired"—that sheets need a rest on the shelves, as do also blankets. Of course, all the good that you had hoped to do in buying in large quantities will have been for nothing unless your storekeeper is "stingy" in giving out supplies. Where nurses think they can get anything they want at any time, they are certain to want it, and they are certain to break it or tear it, or use it up very much quicker.

The Theory of Fowler's Posture.

The propped-up position in the after-treatment of patients who have been operated on for any condition of acute peritonitis is firmly established in favor with surgeons. But according to Dandy and Rowntree, who have published some researches on the absorption of fluids from the peritoneum in the *Annals of Surgery*, the theoretical advantages which Dr. Fowler sought to secure by his posture rested on two assumptions which have been proved to be quite false. These assumptions are that absorption from the peritoneum takes place into the lymphatic system, and that it is most active on the surface of the diaphragm. Dandy and Rowntree demonstrate that absorption is almost entirely into the blood stream, not into the lymphatics; the once famous stomata on the surface of the peritoneum are discredited as artefacts. Also that the visceral peritoneum absorbs fluids freely, as well as the mural layer. Absorption is equal in all postures except pelvis down, in which it is 15 percent less than in others. Although, therefore, Fowler's posture was based on entirely fallacious views and reasoning, it does all the same result in slightly less active peritoneal absorption, and may therefore be useful in practice for this reason.—The Hospital, London, July 18, 1914.

Medical Staff Organization.

Just because we have trouble with the medical staff organization in our hospital is no reason why a well-organized staff is not the best thing for a hospital. There is nothing like reposing responsibility in people to get results. No one ever hears a trained hospital administrator or an efficient trustee deplore the existence of a medical staff. But we have learned a lot about medical staff organization in the last few years, and we have learned that members of medical staffs are just human beings like the rest of us, and are looking for personal advantage. One of the most discouraging and unhopeful signs in a hospital is to find the medical men taking no interest in what is being done and how it is being done. Let us not be carried away by rosy pictures painted by laymen, who are wholly inexperienced in hospital administration, concerning the smooth operation of hospitals that have no regular medical staff. There must have been a horrible situation in any hospital that can be improved by the dissolution of the medical staff. If the staff is not right, reorganize it and make it right, and don't leave things hanging in the air, so that every individual case that comes up can be made the subject of a controversy by various members of the staff. Every member of every medical staff who is worth while will want all the good cases he can get. The best way is to get your medical staff to help you create an organization that will work smoothly. Don't have nine or ten services, and don't have everybody giving orders. In private practice there are really only four major services—medicine, surgery, obstetrics, and children. Better organize your whole staff around these four, and have every patient admitted to one or other of these services. Admission rooms are not places in which to make differential diagnosis. All that is expected, and should be expected, is to make a sufficient diagnosis for purposes of assignment of the patient to the proper place. In private practice, neurology, dermatology, the nose, throat, eye, and ear specialties, orthopedics, gynecology—all these are what we call reference specialties. When a person gets sick, he doesn't go to a specialist; he goes to the family doctor, and the family doctor will refer the case if a specialist is required. Why should not the same thing be true in the hospital? These specialties are not services at all.

But it seems the major service men are ambitious enough sometimes to think they know the specialties also, and are disinclined to refer patients to men who have been trained along certain limited lines. This ought to be broken up in the hospital, and the major service men, by reason of the fact that we are giving them all the patients for purposes of diagnosis, ought to be more than willing to refer cases that call for the learning and training and experience of men who are spending their lives on a narrow class of cases. Major service men who will not refer cases properly and promptly are hurting the hospital, because patients are entitled to the care of these specially trained people. If the major service men knew what was good for them, they would be glad to have all patients go through their hands for diagnosis and differential diagnosis, to be then passed along to the specialists.

THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to THE MODERN HOSPITAL, Kitchen Department, Metropolitan Building, St. Louis.

The Ward Hot Table.

These tables, in the majority of cases, have been made with cupboards below for plates—white enamel or copper tops, with the vegetable jars and meat platter. At one side is a gas hot plate, with a toaster below it.

Being close to the floor makes cleaning below the hot table very difficult, and the nurses have to stoop low to get the plates, and cannot see to the back of the warmer without getting down on their knees.

The best type of ward table stands upon legs, and has only an open metal shelf below, which is a convenience for storing utensils, while the space between the shelf and the floor allows ample room to clean the floor. The steam table pan is of heavy copper, supported upon an angle-iron frame to prevent sagging. The top is of white porcelain enamel, and over the whole is a plate warmer, with sliding doors. At one side is the gas hot plate, with a toaster below.

The best type of these warmers is covered entirely in white enamel, held in place by German silver or nickeled steel bands. The effect of silver and white gives a handsome appearance, besides being easily kept clean, owing to dirt being easily visible.

The heating can be either by gas or steam, the latter being preferable. Where electricity can be had at a low cost, it is practical to use it in place of steam for the steam table, the hot plate and toaster, and for the plate warmer. Owing, however, to the necessary insulation to preserve the heat and the high cost of the electrical units, the cost of the apparatus fitted for electricity is very much higher than for steam heat both in purchase price and upkeep.

A Model Small Hospital Kitchen.

The kitchen equipment plan illustrated in Fig. 1 shows a nearly model arrangement for a small hospital. The dishwashing is arranged alongside the dumb waiters and the door, so that it is not necessary for the help to enter the kitchen proper. A hand dishwashing machine and a steel scrap table are indicated. The arrangement is such that none of the incoming service crosses the path of the outgoing. The bake shop and store rooms are separate, and can be locked up, and ample work table space is provided.

The plan gives the description of each piece of equipment, so that farther description is unnecessary.

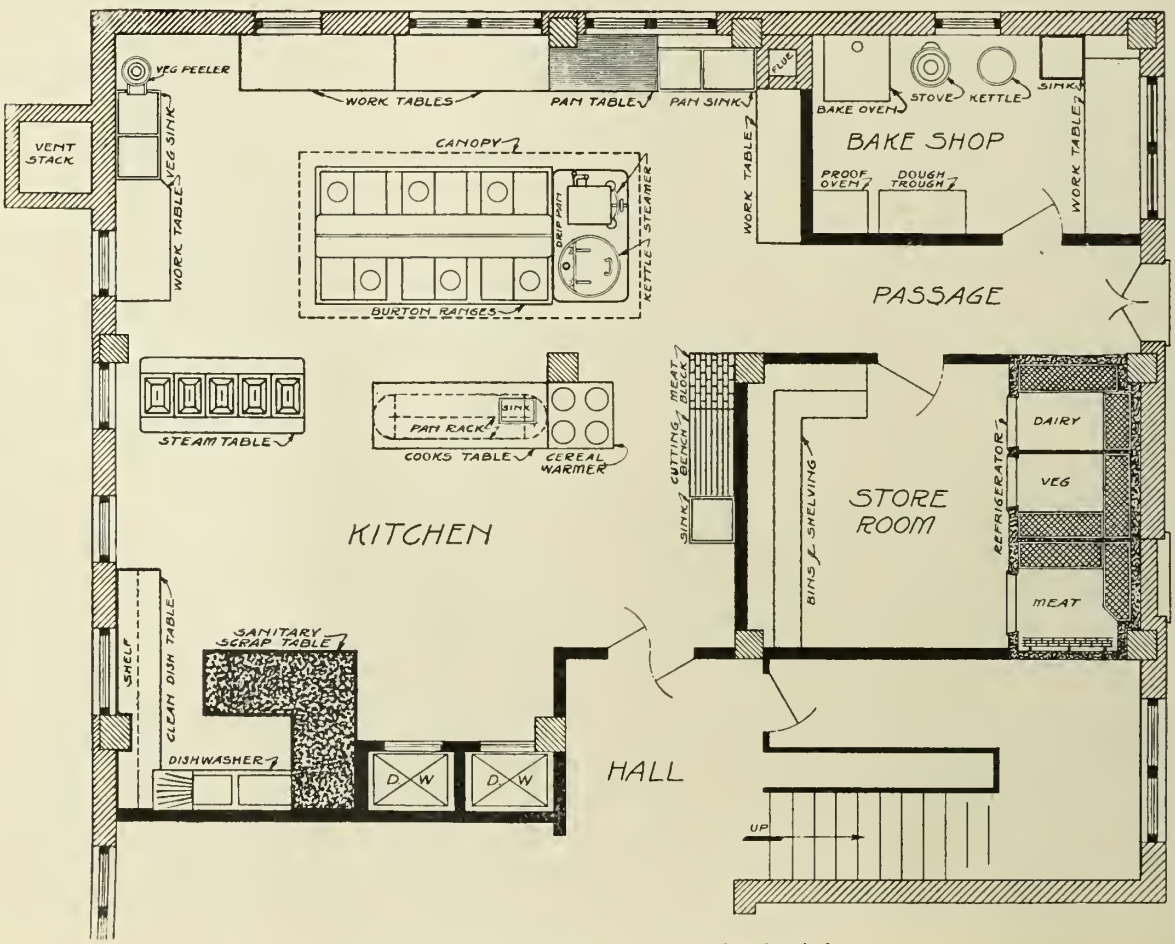


Fig. 1. Kitchen equipment for a medium-sized hospital.

Ward Kitchen Utensils.

The following is the list of small utensils specified for the ward kitchens in the new Cincinnati General Hospital:

1 French drip coffee pot, 1-pint, heavy tin.
1 ice crusher.
4 patent ice cream dippers, 10 to quart, for serving vegetables, etc., as well as ice cream.
1 French strainer, medium brass wire mesh.
1 brown earthenware teapot, 1-pint.
1 ice cream packing can and bucket, 1-gallon.
1 compartment spice box, 6 boxes in each compartment, covered and stenciled, 9¾x6¾x3½ inches deep, white japanned.
1 glass lemon reamer.
1 long-handled kitchen fork.
2 short-handled kitchen forks.
2 dover egg beaters, small and large.
2 6-inch Sabatier cook knives.
1 pierced ladle, 12½-inch.
1 retinned forged basting spoon, 12-inch.
1 wood spoon, 8-inch.
2 4-gallon garbage cans.
1 scrap pail.
1 bread chest, white enamel, 10x20 inches.
1 cake chest, white enamel, 10x15 inches.
1 canister, stenciled, sugar, 2-pound.
1 canister, stenciled, flour, 2-pound.
1 canister, stenciled, salt, ⅝-pound.
1 canister, stenciled, tea, ⅝-pound.
1 canister, stenciled, soda, ⅝-pound.
1 canister, stenciled, coffee, 2-pound.
1 aluminum teakettle, 7½-quart, No. 118.
2 aluminum measuring cups, ½-pint, No. 180.
1 aluminum heavy fry pans, 11⅛ inches diameter, No. 457.
1 aluminum heavy fry pan, 14 inches diameter, No. 414.
1 aluminum saucepan, long handle, 8½-quart, No. 510.
1 aluminum double boiler, 7-quart, No. 918.
1 aluminum double boiler, 2-quart, No. 141.
1 aluminum ladle, No. 360.
2 aluminum taper teapots, 3-quart, No. 45.
4 aluminum tablespoons.
4 aluminum teaspoons.
1 aluminum egg poacher to poach 12 eggs.
1 spatula, 8-inch.
2 vinegar cruets, 1-pint.
1 toaster, 10x17 inches.
1 Surprise egg whip.
1 white enamel pitcher, 1-gallon.
1 mixing bowl, 4-quart, brown earthenware.
1 mixing bowl, 2-quart, brown earthenware.
6 ramekins, ¼-pint.
6 custard egg cups, ¼-pint.
1 aluminum bowl, 1-pint, No. 861.
1 aluminum shallow bowl, 1-quart, No. 292.
1 aluminum deep bowl, 1-quart, No. 293.
4 aluminum flat plates, 8¾ inches diameter, No. 895, for use in refrigerators.
1 aluminum pitcher, 2½-quart, No. 955.

Hand vs. Power Dishwashing Machines.

The principle on which any dishwashing machine, hand or power, must work is the passing over the surface of the dirty dishes of hot water and soap suds not over 190 degrees of heat, and the subsequent rinsing and sterilizing of these dishes in clean water at 212 degrees of heat.

When a great number of dishes is to be washed, the weight of the dishes to be moved to and fro through the water and the quantity of water to be pumped over the dishes necessitates power, but, where a small quantity of dishes is to be washed, one basketful after another can be agitated in the water by hand by the attendant, who otherwise stands idle while power does the agitating.

For a quantity of dishes not exceeding 1,500 per hour, hand power produces the same results as power, and eliminates the cost of the motor, the pump, and the current to run it. For 2,000 dishes and upward per hour, power is advisable, and additional attendants are required to handle the work as the number of dishes increases.

The claims made that power is advisable for all dishwashing machines should, therefore, be qualified by stating for all dishwashing calling for over 2,000 dishes per hour.

LETTERS TO THE EDITOR.

A Correction.

To the Editor of THE MODERN HOSPITAL:

In the rush of correcting the proof of our advertisement in the December issue of THE MODERN HOSPITAL, we allowed an error to escape, stating that the Evanston Hospital had purchased $15,000 worth of sterilizers from us. So far as we know our original copy for this advertisement read $1,500 worth of sterilizers—not $15,000. In justice to ourselves, and in order that there may be no misconception, will you kindly call attention to this error in the next issue of your esteemed journal?

THE HOSPITAL SUPPLY COMPANY.
L. L. Watters.

Demands of Nursing.

There are three great demands on the nurse which summarize the requirements expected of her. They are science, sympathy, and cheerfulness. Science comes first, for the standard of a hospital is usually measured by the character and efficiency of its nursing staff. The trained nurse has come to be regarded as quite as essential to the welfare of the patients in any medical or surgical case as is the operating surgeon or physician. She must, therefore, have a firm, minute grasp of the application of the laws of health in the fields of nursing.

Then, too, her ear must be attuned to catch the groan of the sufferer, her hand must have the magic touch of tenderness to soothe the anguish, and her feet swift to run where duty calls. Although a professional, she must be a woman still.

If the painter must mix brains with the paint, the nurse must mix the sympathy of the heart with her service.

Third, in regard to cheerfulness, the speaker suggested that every nurse commit to memory Robert Louis Stevenson's "Celestial Surgeon." A gloomy nurse is unthinkable. A despondent nurse should never have charge of those who are ill, and a long-faced visitor should be kept outside of the sick room. Courage and cheer must be the morning star ever seen on the countenance of her who takes on herself the task of ministering to the afflicted. Like the minister, the nurse may never grow rich in her profession, as men call riches, but there are compensations of a superior character which they may claim as their own. The joy of a life well spent is one of the dearest possessions of the human life.—Rev. Walter Aitken at Brokaw Hospital Training School, Bloomington, Ill.

The Feeding of Hospital Nurses.

The *Daily Telegraph* has given publicity to a letter from a layman who asseverates that hospital nurses in certain unnamed institutions are not properly fed. The complaint, he says, is not usually that the food is insufficient, but that it is badly cooked and roughly served; and he protests indignantly against such a state of affairs. According to our judgment, there is substance in these accusations, though, happily, less than there used to be; even in the last ten years there has been a notable improvement in the food provided for hospital nurses. To some extent this may be ascribed to the adoption by so many hospitals of systematized accounts on the uniform system, whereby the actual cost of feeding the nurses is accurately ascertainable. As far as our experience goes, we should say that insufficiency of food for the nurses, in quantity or quality, is still met with in a small proportion of hospitals, and that complaints as to unattractive service would be justifiable in a considerably larger percentage. With the *Daily Telegraph's* correspondent we agree that such a state of things is "utterly wrong," and that it should be reformed. —The Hospital, London, July 18.

The Work of the District Nurses.

The people whom the workers of the District Nurses' Association help are the people who in illness are least able to help themselves. The nurses go into the homes of people who cannot lay money by for a rainy day. They are at the bedside of children just coming into the world. They are eyes for the blind, feet for the aged. And not least of the duties they assume is that of cheering the "shut-ins," to whom there is little of cheer beyond the neighbors' occasional call and the chance reading matter that comes their way.—Toledo Blade, June 19.

HINTS FOR HOSPITAL SUPERINTENDENTS.

A few years ago there was an intern in one of the large hospitals who was rough and gruff, not to say abusive, to patients. After several warnings he was finally told that another incident of the sort would mean his instant expulsion. He stopped the practice and gave no more trouble; but it was always the fear of dismissal and not a change of heart that caused his good behavior. Within a few months after his service was ended he became the victim of a most serious and very painful malady, which lasted several weeks. He was brought to the hospital, where every attention was shown him, and, because he was not a very courageous sufferer, the nurses even "babied" him a good deal. When he was about to leave the hospital, and to thank those who had been kind to him, he remarked to the head nurse, "Well, I've been taught the lesson of my life; I had never been sick an hour until I came here this time; I had never had a pain, excepting the little hurts that a child gets; I used to think patients were 'playing to the gallery' when they groaned and writhed; now I know what pain and suffering are, and hereafter I'll have some sympathy for the sick and hurt." That fellow is turning out to be almost sentimentally sympathetic, and is rapidly acquiring a large practice chiefly on this asset.

There are some misconceptions in the public mind about the underlying principles operating in our maternity departments. When we begin to talk about asepsis and the necessity to get the modern woman into a good maternity hospital for her confinement, we are referred back to the Indian woman and Eskimo and the African negress, who give birth to their babies and go on with their work the same day, and the argument is that the carefulness we are practicing is unnecessary. Of course, this is not true. In the first place, the Eskimo and the Indian woman is an old hag at thirty, pot-bellied and misshapen. In the next place, our women differ from the savage. They wear corsets and shoes that make the Chinese woman's shoes seem harmless by comparison. Our women are high strung and of a far different nervous organization, and we know how intimately associated with the nervous system are the organs of generation and reproduction. If we practiced the obstetrics of the savage on the women of our time, we would have no women left and few healthy babies, and we have few enough healthy babies born as it is. There is no telling how many of our modern women are rendered sterile after their first child by being taken care of by a filthy, ignorant midwife or an incompetent doctor, and the statistics show that 50 per cent of the blindness in the world is due to the improper care of women at childbirth.

How long has it been since you had your chemical fire extinguishers looked over and recharged? You know, of course, that chemicals deteriorate; you know also that people are likely to upset the extinguishers and destroy their contents. If you really appreciated how many incipient fires these little machines will put out, you would keep them in good order.

Take care of your fire hose, so that it will be serviceable if it is ever wanted. Most interior hose is made of cotton fabric, without rubber. If this fabric gets wet and stays wet, it will soon rot. The wetting may come from a leaky valve in the riser. The constant cleaning of the brass work at the nozzle and at the riser connection is also likely to rot the fabric. The fabric is likely to be rotted also at the folds in the coils. About once a month a personal inspection of the hose and its connections should be made by someone capable of good judgment in the matter. The fire department of the city or town will always be glad to send one of its higher officers to make this inspection for a hospital. There is a difference of opinion even among fire experts as to whether a hospital should buy expensive hose; the cheaper grades will last just as long as the more expensive if it is not in actual use, and the thinner fabric is likely to be the more flexible, and therefore not so likely to break where the folds come. When the hose is found to be worn or rotted about the brass work, it is easy to cut off a little and rejoin the ends. Never run water through your hose unless there is a fire; then take it off and out into the yard and dry it thoroughly before putting it back. Fire drills can be conducted without turning on the water.

Don't do things in your hospital because they "always have been done." We are in an age of invention and initiative and thoughtfulness. We know a great deal about many things that have until recently been shrouded in mystery; and many things we have been doing in past years we did because we did not know any better, and some of these same things we keep on doing because they "always have been done." Better do some original thinking about the routine practices of your hospital. We used to think that a room full of colon pus smell could be entirely disinfected by the use of a little chlorid of lime or the burning of a deodorant candle. Many of us still practice this fallacious routine in our hospitals. It is on the same par of sanity and intelligence as that employed by the ostrich who hides his head in the sand to keep his enemies from finding him. It is astonishing how many health departments in the great cities of this country are practicing a routine so-called disinfection in the homes where communicable diseases have been, that is known even by those who practice it to be utterly useless. Sit down some quiet evening and think how many useless things you are doing in your hospital—some of them costly either in time or money. Nor will we get very much help in this field from our doctors, who are quite as much the creatures of habit as the rest of us. About one-half of the things done under the orders of the doctor in a hospital are mere routine and instigated by the force of habit. How many times do your doctors call for urinalysis because it saves them time that ought to be taken up in personal study of their cases, and because they don't know what else to do? And how many times do they go on demanding these urinalyses from day to day when they are utterly useless, and when the doctors themselves would admit their uselessness. Every moment of the time of everybody in the hospital should be employed, but the time should be profitably employed and not in the carrying out of worn-out practices.

The Cook County Civil Service Commission will hold an examination on January 12 for the position of business manager of the tuberculosis hospital. This institution has a capacity of 700 beds, and the business manager has full charge of about fifteen physicians and fifty nurses, and is responsible for the proper conduct of the entire institution. The examination will comprise the following subjects: a written examination consisting of questions on the duties of the position, a written examination on the educational training and qualifications as shown by the applicant's experience in similar positions, and an oral examination. The applicant should have at least one or two years' experience as superintendent of a hospital or institution. Information and applications may be secured by addressing the Cook County Civil Service Commission, 547 County Building, Chicago, Ill.

THE MODERN HOSPITAL

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SOME ASPECTS OF THE USE OF PROPRIETARY FOODS IN THE DIABETIC DIETARY.[1]

Essentials of Diabetic Foods for Use by Scientific Clinicians—Characteristics of the Foods Found in the American Market—Lists of Preparations With Their Food Values, Cost and Comparative Values.

By JOHN PHILLIPS STREET, M. S.,

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DIABETES is primarily a disturbance of nutrition in which the ability of the organism to utilize carbohydrates (starch, sugars, etc.), as it normally does, is more or less impaired. In the more severe cases there is added to this a disturbance in the utilization of fats, and perhaps also of proteins, by the body.

While there are various methods of treatment of diabetes, all recent authorities agree in placing the chief emphasis on the rôle of diet in the management of this disease. Janeway, Benedict, Joslin, Futcher, Falta, Strauss, von Noorden and other writers on diabetes could be quoted at length in support of this view. The importance of restricting the carbohydrates in certain cases and certain aspects of diabetes is admitted by practically all competent authorities. In order to prescribe a starch-free and sugar-free dietary, which all will admit is necessary at times, and to know with precision the actual amount of the carbohydrates contained in the various available foods, the physician is obliged to rely on the cooperation of the chemist to furnish this requisite information. In answer to this demand the writer, in cooperation with Prof. L. B. Mendel, of Yale University, undertook in 1913 an extensive review of the special foods offered for the use of diabetics in the American markets.[2]

There is some evidence that certain forms of starch or certain carbohydrates are more readily utilized by diabetics than are others. Accordingly one hears of the potato diet, the inulin diet, levulose feeding, etc. Certain dietary measures, such as the "rice treatment" and "oatmeal treatment," are employed for therapeutic effects, the reason for which is not yet adequately understood. These aim primarily to increase the tolerance of the patient or to affect favorably the acidosis attendant upon many cases of diabetes. The discussion of these special treatments is beyond the limits of this paper.

Bread is the one article of diet which enters most extensively into the daily regimen of people in all walks of life. The exclusion of it from the dietary is perhaps the most irksome of all the restrictions to which the diabetic may be subjected in the effort to reduce his intake of carbohydrates. Accordingly, substitutes for bread, resembling it in texture and flavor, have been introduced from time to time. Gluten bread, aleuronat bread, aerated or "Luft" bread and certain nut breads are types of these bread substitutes. Similarly flours have been prepared from the soy bean, almond, peanut, Iceland moss, casein, etc., from which breads and other baked products are made in connection with leavening agents. The "Luftbrot," furthermore, is frequently employed not so much as a complete substitute for bread as to serve as a vehicle for noncarbohydrate foods, such as butter, cheese and certain nut pastes. Its form and flavor furnish a grateful deception to those deprived of ordinary bread.

In preparing gluten bread, gluten flour is used,

[1] This is the first of a series of papers by Mr. Street, designed to be a guide in hospitals for those internists who demand scientific accuracy in the special feeding of their cases.

[2] Rept. Conn. Agr. Expt. Station, 1913, pt. 1, sect. 1, pp. 1-95.

which in turn is made from ordinary wheat flour by the more or less complete washing away of the starch. Unfortunately the so-called gluten flours on the market are most variable products, and few of them are satisfactory from the standpoint of starch content. Of 67 "gluten" flours recently examined by the writer, 20 did not even satisfy the low government standard of 5.6 percent nitrogen, 12 contained less than 13 percent carbohydrates, while the remaining 55 ranged from 28 to 76 percent. Owing to the unreliability of most gluten flours now on the market, many physicians have given up their use. White bread ordinarily contains about 53 percent, and the flour from which it is prepared about 75 percent carbohydrates. When it is remembered that many of the brands of gluten flour widely advertised and sold in American markets contain 50 percent or more of starch, the seriousness of the situation from the standpoint both of the unsuspecting diabetic and of the careful clinician is apparent. Self-medication is always a dangerous pastime, and the use of the special diabetic foods, without a physician's supervision, is generally a hazardous proceeding. Even if the conscientious manufacturer does state on his label the percentage of starch present, what advantage is derived from prescribing or using a flour or bread or baked product supposedly of unique value to a patient, yet differing at most from the commonest, inexpensive, palatable bread by only a few grams of starch in an entire day's ration?

In the complete report of the writer the analyses of nearly 500 special diabetic products are given, including the good, bad, and indifferent. In this paper attention is called only to those which are relatively low in carbohydrates, for while the writer grants the desirability of feeding the patient all the carbohydrates he can tolerate, and recognizes the possible value of the oatmeal, rice, potato and other treatments, in which a relative abundance of carbohydrates is fed for a limited period, it would seem that a low percentage of carbohydrates should be a requisite for a "diabetic" food. Certainly no special food containing nearly as much carbohydrates as a normal food of the same class, and sold at an absurdly exorbitant price, should be entitled to the name "diabetic."

In the tables which follow, all protein values, for the sake of uniformity, were obtained by multiplying the nitrogen by the conventional factor 6.25. In the case of pure gluten products this method gives too high a percentage of protein and too low a percentage of carbohydrates, while in the case of pure casein products the reverse is true. However, inasmuch as the differences due to the protein factor used are relatively small except in the higher grade flours, which are seldom fed alone or in considerable quantity, the carbohydrate values given in the tables can be used without any important effect on the actual content of the daily ration. To prevent confusion it should also be understood that the term "nitrogen-free extract" includes all the carbohydrates except the crude fiber. In the special foods under consideration nitrogen-free extract and carbohydrates may almost be regarded as synonymous, as the percentage of crude fiber present is usually extremely small. A question mark (?) under the starch column means that starch was not reported or determined in that particular food; it may or may not have been present. All the analyses reported in the tables were made in the laboratory of the Connecticut Agricultural Experiment Station except in the few instances where the contrary is indicated.

GLUTEN FLOURS.

(See Table I.)

The gluten flours illustrate the difficulty of the dietitian's selection of proper foods of this class for the feeding of the diabetic patient. I have included in Table I only such brands as complied with the very low present governmental standard of 5.6 percent nitrogen (equivalent to 35 percent protein, using the factor 6.25). There are other brands on the market containing as little as 14 or 18 percent protein with 65 or 73 percent nitrogen-free extract. Such preparations, of course, have no just claim to the name "gluten flour." But even the so-called "standard" gluten flours have an extremely wide range of composition. Our table shows brands ranging from 37.3 to 86.9 percent protein, and from 46.8 percent starch to a mere trace. The first nine brands listed in the table are more strictly "ground gluten" than gluten flour, as they are scarcely finely enough ground to warrant being called flours. They are characterized by their very high content of protein and correspondingly low percentage of starch. They are admirably adapted for use in a strict diet or in one where it is desired to establish the patient's carbohydrate tolerance. Their calorific value naturally is very similar, ranging from 359 to 380 calories per 100 gms. On the other hand their cost warrants serious attention. While it is granted that the removal of the last traces of starch from a gluten flour is a laborious and consequently expensive process, and while the manufacturer who succeeds in doing this is entitled to all credit for producing an article of the highest grade, still the user of these foods may well pause to consider whether quite as good results may not be secured by feeding a smaller amount of a flour

TABLE I—GLUTEN FLOURS.

Date of Analysis.	Brand.	†Protein (N x 6.25).	Fat.	Nitrogen-free Extract.	Starch, by Diastase Method.	†Calculated Calories per 100 gms.	Cost per Pound.
		%	%	%	%		
1912	Barker's Gluten Food, "A"	86.9	0.5	4.6	Trace	370	$1.56
1913	Barker's Gluten Food, "B"	85.1	0.6	7.2	3.7	375	1.19
1913	Barker's Gluten Food, "C"	84.1	0.6	8.6	3.4	377	1.18
1912	Kellogg's 80% Gluten	81.3	0.9	7.9	6.2	365	.64
1913	Metcalf's Vegetable Gluten	80.4	1.5	9.8	5.9	374	.50
1913	Health Food Co.'s Pure Washed Gluten Flour	80.3	1.6	11.1	7.0	380	.26
1907	Bischof's Gluten Flour	79.8	3.6	5.0	?	372	.....
1913	Loeb's Imported Gluten Flour	76.3	0.9	11.8	4.4	361	.40
1913	Van Abbott's Gluten Flour	75.1	0.9	12.6	12.4	359	.72
1913	Van Abbott's Gluten Semola	51.4	2.9	32.4	28.2	361	.....
1913	Sprague, Warner & Co.'s Richelieu Gluten Flour	49.7	1.2	39.7	31.6	368	.23
1913	Gilman's Gluten Flour	47.3	2.0	40.4	31.4	369	.11
1913	Farwell & Rhines' Gluten Flour	46.3	1.1	42.9	32.8	367	.13
1913	Loeb & Co.'s Gluten Flour	43.9	1.1	44.4	39.8	363	.21
1913	Kellogg's 40% Gluten Flour	43.7	0.9	46.0	40.5	367	.13
1913	Pieser-Livingston Co.'s Gluten Flour	43.3	1.3	46.2	38.4	370	.14
1913	Health Food Co.'s Protosac Gluten Flour	42.7	1.7	46.4	36.3	372	.22
1913	Hoyt's Gum Gluten Flour, Ground	41.4	1.4	47.4	40.4	368	.15
1913	Loeb's Pure Gluten Flour	40.3	2.4	46.3	39.6	368	.21
1913	Martindale's Special Gluten Flour	40.3	1.5	49.1	41.4	371	.15
1913	Bond's Diabetic Flour	40.2	1.3	48.3	40.6	366	.09
1911	Johnson's Educator Standard Gluten Flour	40.1	1.4	50.2	40.9	374	.13
1913	Health Food Co.'s Glutosac Gluten Flour	39.9	2.3	47.5	36.9	370	.19
‡1909	Kellogg's 40% Gluten Flour, Self-Raising	38.7	1.0	50.2	?	373	.....
1913	Rademann's Diabetiker Mehl	37.9	0.8	50.7	46.8	362	.37
1913	Health Food Co.'s Proniren (Griddle Cake Flour)	37.3	1.2	47.3	37.7	349	.19

‡See Fetterolf, Univ. of Penn. Med. Bull., Sept., 1909. †Large calories based on an average available fuel value of 4 calories per gram for protein and nitrogen-free extract and 9 calories per gram for fat. *See page 74.

containing somewhat more starch, which may be secured at from one-sixth to one-fourth of the cost. It will be noted that the cost of the nine brands under discussion ranges from 26 cents to $1.56 per pound, a wide range indeed. The more expensive and more nearly starch-free flours, however, are extremely valuable in a very strict diet.

Concerning the remaining seventeen gluten flours given in Table I little need be said. The protein ranges from 51.4 to 37.3 percent, and conversely the starch from 28.2 to 46.8 percent. In other words, they contain from 40 to 62 percent as much starch as found in ordinary wheat flour. Where as much as 25 percent of starch is permissible in a food intended for a diabetic, a half portion of ordinary flour in the ration will not contain as much starch as a full portion of most of these

TABLE II—OTHER FLOURS.

Date of Analysis.	Brand.	Protein (N x 6.25).	Fat.	Nitrogen-free Extract.	Starch, by Diastase Method.	Calculated Calories per 100 gms.	Cost per Pound.
		%	%	%	%		
1913	Menley & James' Glidine	91.4	0.8	1.0	0.0	377	$2.40
1906	Callard, Stewart & Watts' Casoid Flour	*85.6	0.5	*1.4	0.0	353	.75
1913	Health Food Co.'s Almond Meal	50.3	14.8	17.9	Trace	406	.97
1913	Jireh Cottonseed Flour	49.1	12.7	21.3	6.0	396	.18
1913	Cereo Soy Bean Gruel Flour	43.1	21.4	24.9	Trace	465	.49
1913	Waukesha Hepco Flour	42.9	20.8	22.4	Trace	448	.....
1913	Health Food Co.'s Protosoy Soy Flour	42.3	19.8	24.5	Trace	446	.45
1913	Jireh Soja Bean Meal	42.3	18.2	25.8	Trace	435	.30
1913	Metcalf's Soja Bean Meal	41.0	20.0	25.0	Trace	444	.50
1913	Van Abbott's Almond Flour	24.6	58.6	7.9	0.0	657	.45

*If the correct factor, 6.37, is used, the protein amounts to 87.3, and the nitrogen-free extract, obtained by difference, entirely disappears.

TABLE III—BREADS AND BAKERY PRODUCTS.

Date of Analysis.	Brand.	Protein (N x 6.25).	Fat.	Nitrogen-free Extract.	Starch, by Diastase Method.	Calculated Calories per 100 gms.	Cost per Pound.
	Soft Breads.	%	%	%	%		
1913	Ferguson's Gluten Bread	24.2	3.1	33.6	25.2	259	$0.19
1906	Health Food Co.'s Glutosac Bread	27.2	2.7	36.1	*29.9	278	.....
1906	Health Food Co.'s Protosac Bread	32.5	1.6	37.0	*33.1	292	.....
1913	Loeb's P. & L. Genuine Gluten Bread	25.8	2.7	27.8	23.9	239	.14
	Hard Breads, Biscuits, etc.						
1907	Bischof's Diabetic Gluten Bread	73.1	0.5	14.3	?	354	.....
1912	Brusson Gluten Bread	37.3	1.8	42.1	40.1	354	1.33
†1909	‡Almond Biscuit, Plain	28.3	28.0	§36.8	?	512	.....
†1909	‡Almond Shortbreads	19.5	52.1	§20.7	?	630	.....
1913	‡Casoid Biscuits No. 1	66.8	18.8	5.8	4.0	460	3.00
†1909	‡Casoid Biscuits No. 2	57.8	25.5	§ 5.6	0.0	483	.....
†1909	‡Casoid Biscuits No. 3	54.3	25.0	§ 7.8	Trace	473	.....
†1909	‡Casoid Dinner Rolls	78.0	11.1	§ 2.1	?	420	.....
†1909	‡Casoid Lunch Biscuit	25.5	44.9	§21.6	?	593	.....
†1909	‡Casoid Rusks	37.0	32.3	§20.8	?	522	.....
†1909	‡Cocoanut Biscuit and Saccharin	16.6	61.3	§16.4	?	684	.....
†1909	‡Ginger Biscuit and Saccharin	17.1	58.6	§18.1	?	668	.....
1913	‡Kalari Batons	43.2	39.0	7.4	0.0	553	2.13
†1909	‡Kalari Biscuits	56.9	31.4	§ 1.7	?	517	.....
†1909	‡Prolactic Biscuit	42.9	27.5	§19.3	?	496	.....
1913	Charrasse Biscuits Croquettes au Gluten	34.3	5.4	52.3	30.6	395	3.16
1913	Charrasse Gluten Exquis Biscuits aux Amandes	18.1	23.8	50.6	25.5	489	3.60
1913	Charrasse Gluten Fleur de Neige Pain	35.9	12.5	42.8	25.1	427	3.57
1913	Charrasse Mignonettes au Gluten	40.1	5.7	43.6	27.3	386	3.52
1913	Charrasse Pain de Gluten	40.8	5.3	43.5	27.2	385	1.41
1913	Charrasse Tranches Grillés pour Potage	40.6	3.6	45.5	28.8	377	3.36
1913	Fromm's Luft Bread	50.9	1.0	30.7	23.4	335	2.33
1913	Fromm's Uni Bread	71.7	1.7	9.4	2.9	340	2.25
1914	Fromm's Conglutin-Drops	50.8	1.1	36.1	29.2	358	.....
1914	Goldscheider's Cocosnuss-Biskuits für Diabetiker	34.4	¶45.4	13.9	0.0	...	.....
1914	Goldscheider's Vanille-Biskuits für Diabetiker	46.4	¶30.3	16.8	0.0	...	.....
1914	Goldscheider's Hönigküchen für Diabetiker	40.3	¶38.8	13.9	0.0	...	.....
1913	Health Food Co.'s Alpha Diabetic Wafers	66.1	13.6	11.3	Trace	432	2.58
1913	Health Food Co.'s No. 1 Proto Puffs	76.3	2.9	10.7	4.3	374	1.13
1913	Health Food Co.'s No. 2 Proto Puffs	56.6	2.1	30.7	19.0	368	.95
1913	Health Food Co.'s Protosoy Diabetic Wafers	43.1	24.9	21.2	4.7	481	1.08
1914	Heudebert's Pain d' Aleurone pour Diabétiques	76.1	1.5	9.2	4.2	354	1.42
1914	Heudebert's Pain de Gluten pour Diabétiques	80.7	0.8	6.5	3.4	356	.77
1913	Huntley & Palmer's Akoll Biscuits	54.5	27.4	6.8	Trace	492	1.05
1913	Johnson Educator Gluten Bread Sticks	35.9	7.2	45.8	37.5	392	.65
1911,'12,'13	Kellogg's 40% Gluten Biscuit. (Average of the three years.)	42.7	0.8	46.7	38.4	365	1.02
1912	Kellogg's 80% Gluten Biscuit	82.4	0.9	4.4	4.7	355	.72
1913	Loeb's Gluten Luft Bread	34.1	8.7	47.4	40.1	404	.84
1913	Pokorny's Diabetiker-Zwieback	32.9	48.0	10.4	3.6	605	.....
1913	Pure Gluten Food Co.'s Gum Gluten Biscuit Crisps	42.9	0.7	48.5	39.3	372	1.07
1913	Pure Gluten Food Co.'s Gum Gluten Dainty Fluffs No. 1	86.0	0.6	5.0	5.0	369	.....
1913	Rademann's Diabetiker-Biskuits	29.6	19.6	44.5	25.9	473	1.51
1913	Rademann's Diabetiker-Cakes	29.6	13.5	47.2	39.1	429	1.65
1913	Rademann's Diabetiker-Dessert-Gebäck	22.2	42.4	27.5	5.9	580	2.52
1913	Rademann's Diabetiker-Makronen	23.2	48.0	20.6	3.0	607	3.29
1913	Rademann's Diabetiker-Stangen	17.7	44.2	29.5	21.4	586	1.55
1913	Sanity Diabetiker-Bisquits	25.8	18.2	45.3	35.4	448	.....
1913	Sanity Mandelgebäck für Diabetiker	32.5	48.6	10.8	4.0	611	.....
1913	Van Abbott's Caraway Biscuits for Diabetics	35.6	37.5	15.9	8.6	544	1.00
1913	Van Abbott's Diabetic Rusks for Diabetics	70.9	0.8	16.0	12.6	355	3.63
1913	Van Abbott's Euthenia Biscuits	35.8	40.7	13.2	6.9	562	1.49
1913	Van Abbott's Gluten Biscottes or Rolls	51.6	2.3	33.0	29.8	359	1.30
1913	Van Abbott's Gluten Bread or Slices	54.1	2.2	30.9	27.4	361	1.51
1913	Van Abbott's Gluten Butter Biscuits for Diabetics	44.1	33.2	12.7	9.0	526	1.40
1913	Van Abbott's Ginger Biscuits for Diabetics	34.6	39.4	16.7	10.9	560	.77
1913	Van Abbott's Midolia Biscuits	17.6	36.4	31.6	13.4	524	.32
1913	Van Abbott's Walnut Biscuits for Diabetics	20.9	57.2	12.3	Trace	648	1.22
1913	Waukesha Hepco Dodgers	41.6	21.3	20.7	Trace	441	.....

*Determined by diastase method, without previous washing with water, and calculated as starch. †Fetterolf, Univ. of Penn. Med. Bull., Sept., 1909. ‡Made by Callard, Stewart & Watt. §Includes crude fiber. ¶Includes some glycerine.

standard gluten flours. The percentage of protein will naturally be much higher than that found in ordinary flour, but it must never be forgotten that these special foods are recommended for the diabetic's use not so much because they are high in protein, but because they are assumed to be low in starch, an assumption which analysis promptly disproves in many cases. Again the range in cost is very wide, from 9 to 37 cents per pound.

OTHER FLOURS.

(See Table II.)

Under this caption are listed in Table II certain typical flours, all of which are admirably adapted for strict diabetic feeding. With the exception of the cottonseed flour, which contains 6 percent of starch, they are almost starch-free. The *Casoid Flour* is also essentially carbohydrate-free, as the small percentage reported, 1.4, is due to our use of the conventional protein factor, as before stated, for the sake of uniformity. If the true casein factor, 6.37, were used, even this small percentage would practically disappear. *Glidine* is prepared from wheat and *Casoid Flour* from casein. The brand names indicate the source of the other products. The almond "meal" and almond "flour" differ chiefly in the fact that from the former a large portion of the fat has been extracted, thereby increasing the relative percentages of protein and nitrogen-free extract. The soy bean flours appear to be particularly valuable preparations, as they are natural products, almost starch-free. Analyses made in the writer's laboratory show that they contain small amounts of sucrose and raffinose, but that the bulk of their nitrogen-free extract is made up of pentosan, galactan and other hemi-celluloses, which clinical experience indicates do not increase the glycosuria of the diabetic. The range in price from 30 to 50 cents per pound for products of practically the same composition hardly seems justified.

SOFT BREADS.

(See Table III.)

Only a limited number of brands of soft bread are offered in our markets, and the use of these is naturally restricted to the more or less immediate vicinity of their place of production. Such breads, unlike the hard breads, rapidly become stale. Of the four brands listed *Protosac Bread* contains considerably more protein and *Loeb's P. & L. Genuine Gluten Bread* somewhat less nitrogen-free extract than the other brands. The starch content is about half that of ordinary bread.

HARD BREADS, BISCUITS, RUSKS, ETC.

These products are of the most diverse character. Some are exceedingly rich in protein and low in starch, while with others the reverse is true. The fat content also is extremely variable, the brands containing nut meals and chocolate showing very high percentages. Likewise the calorific value has a wide range, namely, from 335 to 684 calories per 100 gms. Ordinary biscuits contain about 72 percent of nitrogen-free extract, and it will be noted that all the brands listed contain very much lower percentages than that, seldom over 50 percent. Aside from the starch content, the cost of these products must be considered. This ranges from 32 cents to $3.63 per pound. The brands costing $3.00 or more per pound contain from 18.1 to 70.9 percent protein and from 52.3 to 5.8 percent nitrogen-free extract, showing that a high price by no means necessarily indicates that the particular food is especially fitted for the use of the diabetic. The relative expensiveness of the imported products is well shown by a comparison of two of the *Fromm* brands with two very similar preparations of the *Health Food Co. Fromm's Uni Bread* and *No. 1 Proto Puffs*, while totally dissimilar in appearance, resemble each other very closely in composition; the former costs $2.25 per pound, the latter $1.13, or about half. Similarly, *Fromm's Luft Bread*, very similar in composition to *No. 2 Proto Puffs*, costs $2.33 per pound, while the *Puffs* cost but 95 cents. It is hard to see how the German preparation can be sold in competition with the purely American product, which is quite as good and costs less than half as much.

The table also illustrates another important point, namely, that in only a few instances can the buyer depend upon the manufacturer's name to insure the integrity of his product. Most manufacturers produce foods of different grade from the standpoint of starch content. (Many of these inferior products are not listed in Table III). Certain *Fromm* products, for instance, contain as much as 68.4 percent of nitrogen-free extract, certain *Health Food Co.* products as much as 58.5 percent, certain *Kellogg* products as much as 57.7 percent, and certain *Rademann* brands up to 58.4 percent. The *Charrasse, Jireh Diabetic Food Co.* and *Johnson Educator Food Co.* diabetic biscuits, crackers, rusks, etc., which the writer has analyzed, uniformly ran high in nitrogen-free extract—*Charrasse* from 42.8 to 73.4 percent, *Jireh* from 46.3 to 72.3 percent, and *Johnson* from 45.8 to 68.1 percent. Many of these products have no more right to be called "diabetic" foods than wheat bread, oatmeal or potatoes. On the other hand, in the writer's experience, the *Callard, Stewart and Watt*, and the *Van Abbott* preparations uniformly contain relatively low percentages of nitrogen-free extract.

Table IV—Chocolate and Cocoa.

Date of Analysis.	Brand.	Protein (N x 6.25).	Fat.	Nitrogen-free Extract.	Starch.	Calculated Calories per 100 gms.	Cost per Pound.
		%	%	%	%		
1913	Brusson Chocolat with Added Gluten	15.9	49.7	26.4	9.2	617	$1.63
1913	Fromm's Conglutin-Diabetiker-Schokolade	17.6	39.1	32.7	4.3	553	1.89
1914	Goldscheider's Dessert-Schokolade für Diabetiker	11.4	57.6	25.4	5.0	666	.....
1914	Goldscheider's Mocca-Schokolade für Diabetiker	10.2	60.2	23.5	4.1	677	.....
1914	Goldscheider's Nuss-Schokolade für Diabetiker	14.6	54.4	23.3	6.9	641	.....
1914	Goldscheider's Orange-Schokolade für Diabetiker	11.4	57.6	24.9	5.0	664	.....
1913	Rademann's Diabetiker Schokolade	17.5	57.6	16.9	3.8	656	2.06
1913	Sanity Laevulose Schokolade	11.4	43.4	35.6	6.2	579	.....
1913	Sanity Mandel-u. Nusschokolade mit Laevulose	12.0	53.9	26.2	4.3	638	.....
1913	Sanity Manit-Schokolade	10.0	43.7	37.9	4.8	585	.....
1913	Sanity Diab. Mandel-Nuss-u. Schokolade Bonbons	12.5	28.8	37.1	Trace	458	.....
1913	Casoid Chocolate Almonds	22.3	51.8	16.1	Trace	620	2.12
1913	Charrasse Gluto-Cacao	21.5	22.2	40.1	16.3	446	.....
1913	Rademann's Diabetiker-Cacao	17.6	23.6	44.7	10.7	462	1.41

CHOCOLATE AND COCOA.

(See Table IV.)

Plain chocolate, cocoa, milk chocolate, and sweet chocolate, on the average, contain about 25, 38, 51, and 67 percent of nitrogen-free extract, respectively. In judging the value of a diabetic chocolate or cocoa, in comparison with the ordinary commercial preparations, these values must be kept in mind. Certain European manufacturers have substituted levulose for cane sugar or milk sugar, on the theory that levulose is less objectionable for diabetics than other forms of sugar. So high an authority as von Noorden, speaking of this subject, writes as follows in his *Die Zuckerkrankheit und ihre Behandlung, 1910, p. 279:*

"That levulose, milk sugar and inulin are more useful than the other carbohydrates is a common opinion, but the importance of their use in practice does not correspond with the theory. In light cases the form of carbohydrate makes little difference; in severe cases the advantage from using levulose, milk sugar, etc., is only slightly greater than from using bread and flour. . . . Only in certain cases does it appear to me that the special form of carbohydrate possessess any particular significance."

In addition to this substitution of carbohydrate, it is apparent that the nitrogen-free extract of a chocolate or cocoa may be reduced by the addition of nitrogenous matter, such as casein or other protein preparations.

In Table IV are listed eleven brands of diabetic chocolate on the American market. They range from 16.9 to 37.9 percent nitrogen-free extract, in only three cases appreciably lower than in average plain chocolate, but in all cases considerably lower than found either in milk or sweet chocolate. The cost of these chocolates, from $1.63 to $2.06 per pound, is out of all proportion to their value. *Casoid Chocolate Almonds* are a confection relatively low in carbohydrates, and containing only a trace of starch; their cost, however, $2.12 per pound, is extremely high.

The two cocoas listed show no advantage over ordinary cocoa, containing as they do slightly more nitrogen-free extract than the commercial article. *Jireh Diabetic Cocoa*, not listed in our table, contains about twice as much carbohydrates as pure cocoa, barley starch being added. *Rademann's Cocoa*, at $1.41 per pound, in the writer's opinion, possesses no advantage to the diabetic over ordinary cocoa.

Table V—Jams, Jellies and Fruit Juices.

Date of Analysis.	Brand.	Invert Sugar.
		%
1913	Bernhard's Kirschen mit Stein	3.81
1913	Casoid Sugarless Jam	1.46
1913	Casoid Sugarless Marmalade	1.24
1913	Muller's Tomatoes für Diabetiker	7.30
1913	Rademann's Entzuckert Conservirte Früchte	3.41-3.67
1913	Rademann's Erdbeeren in eigenem Saft	5.72
1913	Rademann's Preisselbeeren ohne Zucker	7.00
1913	Rademann's Feinste Johannisbeer Saft	0.85
1913	Sanity Huckleberry Wine for Diabetics	0.14
1913	Van Abbott's Diabetic Table Jelly, Orange	0.00

JAMS, JELLIES, AND FRUIT JUICES.

(See Table V.)

When it is remembered that ordinary jams, preserves, and marmalades contain 50 percent or more of sugars, it is evident that the preparations listed in Table V are not without merit. The total

sugars, calculated as invert, range from none at all to 7 percent. The *Rademann* fruit preparations, however, are artificially colored with coal-tar dyes, and although the use of these dyes is sanctioned by the U. S. Government, any sort of coal-tar color would seem to be out of place in foods intended primarily for the use of invalids.

Muller's Tomatoes fuer Diabetiker contain only 7.30 percent of invert sugar, considerably less than found in ordinary tomato preserves, but more than contained in many ketchups and most brands of canned tomatoes. *Sanity Huckleberry Wine* is a very dry product, almost sugar-free.

MISCELLANEOUS FOODS.

(See Table VI.)

Under this heading are grouped certain breakfast foods, noodles, nuts and nut preparations, sugar-free milk, and baking powder. Certain "diabetic" breakfast foods on the market contain from 69 to 77 percent of nitrogen-free extract. The four brands listed are an improvement on such products, but still contain about two-thirds as much nitrogen-free extract as ordinary cereal breakfast foods. They are very much higher in protein than the ordinary product, but again we must emphasize the fact that in purchasing diabetic foods the physician buys them not because they are rich in protein, but because they are supposed to show a marked reduction in the diabetic's worst enemy, carbohydrates.

There are "diabetic" macaroni, vermicelli, spaghetti, and noodles on the market which contain from 70 to 76 percent of nitrogen-free extract, or as much as the ordinary product. The two brands of noodles shown in the table are relatively low in this respect, but it is a question whether from the diabetic's standpoint the reduction in carbohydrates warrants the payment of from 58 to 70 cents per pound for them.

The two brands of pine nuts (pignolias) represent a very useful and important class of foods for the diabetic. Most of our ordinary nuts, except the chestnut, are very low in starch. Furthermore, their protein and fat content is high, and, what is probably almost as important, they offer the diabetic a really appetizing food. Of the ten manufactured nut preparations listed all but *Nut Bromose* and *Malted Nut Food* are extremely low in nitrogen-free extract. These are admirably adapted to the use of the diabetic, especially in connection with "Luft" breads or biscuits, themselves showing low percentages of carbohydrates. Likewise peanut butter serves well for this pur-

Table VI—Miscellaneous Foods.

Date of Analysis.	Brand.	Protein (N x 6.25).	Fat.	Nitrogen-free Extract.	Starch	Calculated Calories per 100 gms.	Cost per Pound.
		%	%	%	%		
1913	Brusson Farine au Gluten	33.9	0.6	53.8	48.8	356	$0.46
1913	Health Food Co.'s Manana	37.6	1.9	46.8	31.0	355	.60
1911	Pure Gluten Food Co.'s Gum Gluten Breakfast Food	37.8	1.3	51.8	37.9	370	.20
1911	Pure Gluten Food Co.'s Gum Gluten Granules	45.5	1.6	43.6	32.3	371	.20
1913	Loeb's Home Made Noodles	41.8	5.5	41.7	36.7	384	.70
1911	Pure Gluten Food Co.'s Gum Gluten Noodles	36.6	2.4	51.4	42.0	374	.58
1913	Jireh Diabetic Pine Nuts (Pignolias)	39.7	49.4	3.4	0.0	617	.75
1913	Kellogg's Pine Nuts	38.0	49.6	4.2	0.0	615	.75
1913	Kellogg's Nut Bromose	17.1	26.8	39.4	3.2	467	.61
1906	Kellogg's Sanitas Almond Butter	22.6	61.5	8.2	*3.7	677	....
1906	Kellogg's Sanitas Nut Butter	28.8	50.5	13.9	*9.1	625	....
1906	Kellogg's Sanitas Nut Meal	29.0	51.7	12.1	*8.9	630	....
1906	Kellogg's Sanitas Nuttolene	12.7	21.8	6.3	?	272	....
1906	Kellogg's Sanitas Protose	22.6	9.2	3.6	?	188	....
1913	Nashville San. Co.'s Malted Nut Food	24.7	42.7	27.5	3.4	593	.25
1913	Nashville San. Co.'s Nut Butter	28.0	52.6	13.0	3.8	637	.16
1913	Nashville San. Co.'s Nutcysa	12.9	21.0	6.3	Trace	266	.17
1913	Nashville San. Co.'s Nutfoda	20.8	8.0	6.8	Trace	182	.15
1913	Peanut Butter (ave. 14 brands)	29.3	47.2	15.4	4.6	604	.38
1913	Bouma Sugar-Free Fat Milk	2.4	5.3	0.0	0.0	57	30 cts. for 14.5 oz.
1913	Whiting's Sugar-Free Milk	5.7	7.2	Trace	0.0	88	25 cts. for 8 oz.
1913	Casoid Baking Powder	....	....	....	0.0	...	1.03
1906	Jireh Baking Powder	....	....	....	15.0	...	.60

*Determined by the diastase method, without previous washing with water, and calculated as starch.

pose, as it contains on the average less than 5 percent of starch, has a high calorific value, and is relatively cheap.

The only two brands of sugar-free milk on the American market, as far as the writer knows, are the *Whiting* product prepared in Boston, and the imported *Bouma* bread sold in New York City. These are both true to name, the *Whiting* milk being much the richer, and likewise costing considerably more.

The *Casoid Baking Powder* consists of ground casein and suitable leavening chemicals, and contains no starch. The *Jireh Baking Powder*, on the other hand, contains 15 percent of starch, considerably more than many of the ordinary brands on the market. From the economy standpoint the diabetic might better prepare his own baking powder in small quantities at a time, using two parts of cream of tartar to one of bicarbonate of soda, neither of which, when pure, contains any starch.

ADDRESSES OF MANUFACTURERS.

The following is a list of the manufacturers or agents, with addresses, whose brands are given in the accompanying tables. *This list is given simply as a convenience, and is intended in no sense as a recommendation of any specific firm:*

Herman Barker, Somerville, Mass.; A. Beauvais & Co., 11 West 27th St., New York; Berliner Milchkur-Anstalt, Hellersdorp, Berlin W. 10, Germany; Bischof and Co., London, England; Brusson Jeune, Villemur, Haute-Garonne, France; Callard, Stewart & Watt, 74 Regent St., London, England; Cereo Co., Tappan, N. Y.; Farwell & Rhines, Watertown, N. Y.; Ferguson Bakery, 853 Albany St., Boston, Mass.; Fromm & Co., Dresden, Germany; O. B. Gilman, 205 Tremont St., Boston, Mass.; Glutinerie de Vichy et de la Méditerranée, 4 Rue Sévigné, Vichy, France (Charrasse); Karl Goldscheider, 4 Naglergasse, Karlsbad, Austria; The Health Food Co., 25 Lexington Ave., New York; Ch. Heudebert, Paris, France; Huntley & Palmer, Reading, England; Johnson Educator Food Co., Boston, Mass.; The Kellogg Food Co., Battle Creek, Mich.; Loeb's Diabetic Food Bakery, 505 West 171st St., New York; E. Loeb & Co., 83 Beaver St., New York; Thos. Martindale & Co., 10th and Market Sts., Philadelphia, Pa.; Mayflower Mills, Fort Wayne, Ind.; Menley & James, 168 Duane St., New York; Theo. Metcalf Co., 39 Tremont St., Boston, Mass.; Gustav Muller & Co., 11 West 27th St., New York; Nashville Sanitarium-Food Co., Nashville, Tenn.; Pieser-Livingston Co., 1527 Halstead St., Chicago, Ill.; Pokorny, Teplitz, Austria; Pure Gluten Food Co., 90 West Broadway, New York; Rademann's Nährmittelfabrik, Frankfurt, Germany; Sprague, Warner & Co., Chicago, Ill.; G. Van Abbott & Son, Baden Place, Crosby Row, London, England; Waukesha Health Products Co., Waukesha, Wis.; D. Whiting & Son, 570 Rutherford Ave., Boston, Mass.

The American agents for the Callard, Stewart & Watt preparations are Thos. Leeming & Co., 99 Chambers St., New York; for the Bouma, Brusson, Charrasse, Fromm and Rademann preparations, Gustav Muller & Co., 11 West 27th St., New York; for Huntley & Palmer, William A. Hazard & Co., 29 Broadway, New York; for Heudebert, A. Beauvais & Co., 11 West 27th St., New York; and for Bernhardt, Pokorny and Sanity preparations, Loeb's Diabetic Food Bakery, 505 West 171st St., New York.

HAHNEMANN, NEW YORK, HAS NEW HEAD.

Dr. Wiley Woodbury, Trained Hospital Man, Is Elected Superintendent—Broader Work to Be Done.

Dr. Wiley E. Woodbury, for several years superintendent of the Philippine General Hospital, has been appointed superintendent of the Hahnemann Hospital, located at Sixty-seventh street and Park avenue, New York City.

Dr. Woodbury received his first hospital training at the Grace Hospital, Detroit, where he acted for two years as a member of the hospital staff and as assistant to the superintendent.

He left the Grace Hospital to take the position of assistant physician at the Ionia State Hospital for Criminal Insane, Ionia, Mich. After three years' service in Ionia he received the appointment of superintendent of the Philippine General Hospital, the construction of which had been commenced under the direction of Dr. Victor G. Heiser, who was then and has since been at the head of the Public Health and Marine Hospital Service in the Philippines.

The Philippine General Hospital is the largest American hospital in the Orient and has been constructed and organized along the most advanced lines. Dr. Woodbury continued the construction of the Philippine General Hospital to a total capacity of 550 beds. He organized the hospital in a systematic manner, and at the close of his government contract was induced to remain in charge for a further period of time. The past summer he resigned his position in the Philippines, visited the hospitals of Europe and the East, and returned to his home in Detroit.

The Hahnemann Hospital is a general hospital of 110 beds, and has an endowment of sufficient size to permit it to carry out a large amount of charity work. The president of the board of trustees is Mr. Joseph G. Cannon, of the First National Bank, New York City. The board of trustees have made preparations for a new hospital building, and have accumulated a part of the funds for that purpose. It is the intention of the trustees to organize the hospital to the highest degree of efficiency.

Henry L. Bailey, formerly warden of the Cook County (Ill.) Hospital, at Chicago, has been appointed superintendent of Oak Forest Infirmary, also a Cook county institution, and probably the largest county asylum for the poor in the world. Clayton F. Smith, vice-president of the Board of Local Improvements, is to be the new warden of the Cook County Hospital.

Fig. 1. Walter Reed Hospital—Left to right, main building, sergeant's quarters (two buildings), isolation hospital.

THE WALTER REED UNITED STATES ARMY HOSPITAL, WASHINGTON, D. C.

Nucleus of a Splendid Finishing School for Medical Officers of the Army and Fine Hospital for the Care of Sick and Hurt Officers, Men, and Their Families.

By OUR WASHINGTON CORRESPONDENT.

THE United States Army General Hospital at the nation's capital was first established at Washington Barracks in 1898. The hospital at that time consisted of the old post hospital, used for administrative purposes, and one-story wooden ward buildings of a temporary character. These, however, demonstrated the great advantages of such an institution, and were the foundation for a permanent army general hospital in Washington.

Colonel William C. Borden, now retired, was the first commanding officer, and it was due to his ceaseless endeavors, with the support of Secretary of War Elihu Root and Surgeon-General O'Reilly that Congress approved the project, and appropriated the sum of $300,000 to purchase the ground and start the new buildings.

The creation of a general hospital at Washington, available for any emergency, had been recommended since the time of Surgeon-General Hammond as the result of the experience of the Civil War. This need was reexperienced in the Spanish-American War, at which time the hospital had its origin because of the manifest need for such an institution. The last disturbed condition of the country seemed to point with increased emphasis to the wisdom of the original plan.

The hospital is now known as the Walter Reed Army General Hospital, named in honor of the late Major Walter Reed, Medical Corps United States Army, whose investigations revealed the means by which yellow fever is transmitted from one person to another by a certain species of mosquito. In recognition of his work, Congress created a special rank, a colonelcy, for him in his corps, a mark of unusual distinction.

The preliminary studies for the hospital contemplated an expenditure of $4,500,000 for the buildings alone, which amount included the cost of an army medical school, army medical museum and library, hospital building, officers' quarters, student officers' quarters, barracks, noncommissioned officers' quarters, female nurses' quarters, store houses, stables, garage, chapel, guard house, entrance lodge, etc. About one-eighth of the estimated cost has been expended.

Congress has not made appropriations that the hospital deserves, and in consequence only small additions have been made from time to time, which process is very expensive and extremely annoying, not only to those in authority, but likewise to the patients. Surgeon-General Gorgas is handicapped by a law passed in 1853, which has never been altered, prohibiting the erection of any building the cost of which exceeds the sum of $20,000 without the special authority of Congress.

Since the start of the hospital all the surgeons-general of the army, including General O'Reilly, General Torney, and the present surgeon-general, General Gorgas, and the various commanding officers of the institution—Colonels Arthur, Birmingham, Richard, Fisher, and Phillips—have recommended from time to time the erection of the various buildings contemplated in the original project, and have been only partially successful. Former Quartermaster-General Humphrey was very much interested in the hospital, and secured authority to use the appropriations at his disposal for the erection of several buildings. The present chief of the quartermaster corps, General Aleshire, is also lending a helping hand with the appropriations under his control, with the approval of Secretary Garrison of the War Department.

The hospital is intended for extension during a

time of war. With a general hospital established, everything is in readiness at the outbreak of war to extend the institution immediately to any desired size and to accommodate any desired number of patients. This without the trouble, inconvenience, and delay incident to establishing such a hospital *de novo*.

The functions of a general hospital are so much more extensive and so different from those of a post hospital that they cannot be properly conducted in connection with a hospital having post functions. The functions which particularly obtain with this general hospital are such that the establishment is directly under the control of the surgeon-general of the army and the secretary of war. Patients and officers sent to the hospital for special treatment are brought in direct touch with the war office.

The institution is used for instruction in connection with the army medical school, and its work is adapted to the school curriculum, which cannot be satisfactorily done in a hospital under post control. It presents a great advantage as an associated hospital for army diseases from distant and tropical service. The young officers are taught the methods of administering general hospitals, methods of hospital inspection, the use of the roentgen ray apparatus and other diagnostic apparatus, and are instructed in medical and surgical procedures as adapted to the military service. The student officers are instructed in hospital corps drill, the pitching of field hospitals, and become familiar with the hospital corps equipment and medical supplies.

The hospital is intended for the treatment of special cases. Cases continually arise in the military service for which post hospitals do not furnish the necessary facilities for treatment. These cases are mainly difficult surgical cases requiring treatment by a specialist, the cost of which treatment has ordinarily to be paid for by the Government to civilian specialists. The medical officers of the army attached to this hospital are those having special knowledge and experience.

The hospital permits of the observation of officers ordered before a retiring board, where a careful examination can be given an officer that will more efficiently determine his physical condition than an examination made at a post hospital.

It is intended to arrange for the care of sick children and female patients, members of the families of officers and enlisted men. This will be a great boon, especially to the enlisted men, who can ill afford to provide for hospital treatment for their families. The special equipment of the Walter Reed General Hospital enables the medical corps of the United States army to treat officers and soldiers who have almost hopeless cases, and frequently to effect permanent cures and prevent the retirement of officers and the discharge of soldiers on certificate of disability. When a soldier is discharged on certificate of disability in line of duty, he is practically furnished with a prima-facie case for pension, and the reduction in the number of such discharges saves the Government thousands of dollars.

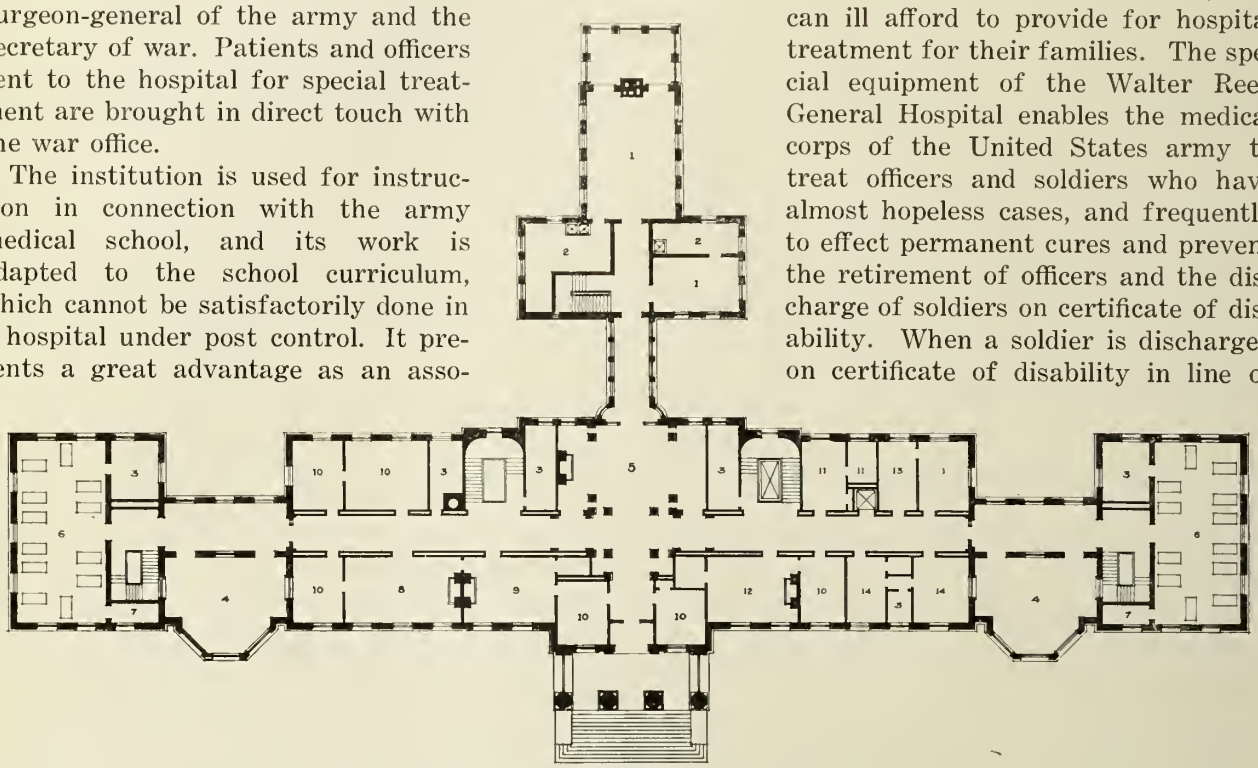

Fig. 2. Walter Reed Hospital—First floor plan of main building.

1. Dining rooms.
2. Pantries.
3. Toilet rooms.
4. Solariums.
5. Reception hall.
6. Wards.
7. Living rooms.
8. Library.
9. Administration office.
10. Executive offices.
11. Dental surgeon.
12. Eye, ear, and throat room.
13. Sewing room.
14. Interns' quarters.

The hospital grounds are located on Georgia avenue, near Takoma, District of Columbia, about one-half hour's ride on the street cars from the center of the city of Washington. The tract contains about fifty acres, and the purchase of an adtional eighteen and a half acres is contemplated. A street car line extends direct to the grounds, and, if the additional ground is purchased, the site can be reached on both the east and west sides by street car lines. A steam railroad station is at Takoma, less than a mile distant, accessible by a trolley line.

DESCRIPTION OF BUILDINGS.

The plan of the first floor of the main building, as shown by the illustration, is self-explanatory. The end wings have been erected only one story, the other stories to be added when congressional authority is obtained.

The building is heated by hot water, principally by the indirect system, the heated air being forced

Fig. 3. Walter Reed Hospital—Barracks for enlisted men.

through the ducts by electric fans; direct and direct-indirect radiators are used for auxiliary heat. Ventilation is mainly by the exhaust system. The hospital building has been erected along the lines of the best sanitary methods, and is equipped with up-to-date appliances and conveniences, including vacuum cleaning apparatus, electric call bell system, intercommunicating telephones, electric elevators, freight lifts, etc. The

Fig. 4. Walter Reed Hospital—Isolation building.

work rooms have floors and walls of enameled brick, tile, or marble.

The basement contains dispensary, x-ray rooms, locker rooms for patients' effects, kitchens and pantries, psychopathic wards, recreation room, hydrotherapeutic rooms, gymnasium, store rooms, fan room, toilet rooms, and boiler rooms. The second story is used for wards, which vary in capacity from 1 to 12 beds, with all the necessary toilet, serving, dining, nurses', and linen rooms. The third floor contains the operating suite, which is modern in every particular, and on this floor are the surgical wards, with their necessary dependencies. The attic of the building is used for storage purposes and convalescents.

Isolation Hospital.—A separate building, is for patients requiring segregation, patients with infectious or contagious diseases, and patients with cases of doubtful diagnosis. The building is equipped with modern appliances for disinfection and sterilization. Insane patients, not considered curable, are sent to the Government Asylum for the Insane at Washington, and tubercular cases are sent to the Army General Hospital at Fort Bayard, New Mexico.

Two sets of officers' quarters have been erected, but it is the intent to erect a sufficient number to

Fig. 5. Walter Reed Hospital—Officers' quarters.

accommodate all the medical officers on duty at the hospital. The buildings are of the best type that have been erected for the military service.

Hospital Corps Barracks Building.—Is for the male nurses of the army. In addition to the dormitories, mess room, kitchen, pantries, etc., the building is provided with class rooms and special diet kitchen for use in connection with the instruction of the members of the hospital corps. The barrack is also provided with a recreation room, reading and study room, barber and tailor shops.

Female Nurses' Quarters.—Accommodate twenty-five nurses in single sleeping rooms, and the building is provided with everything essential to make it a home for the nurses. The building has a reading room, writing room, lecture room, sewing room, laundry, mess room, pantry and kitchen, liberal toilet room facilities, and quarters for female help.

The old tree trunk shown in the photograph, in front of the building, is of historic interest; it is all that is left of the tree that was used by General Early's sharpshooters when he attempted to reach Washington during the Civil War.

There are two double sets of sergeants' quarters for use of the married sergeants of the hospital corps. Each half of the building has five rooms and bath, with cellar under the entire building, containing laundry and heating apparatus.

Store houses have been erected for commissary and quartermaster stores and for medical supplies. Buildings have also been erected for use as a garage, mortuary, and stable.

Army Medical School.—Located at Washington, D. C., was established pursuant to orders of the War Department on June 24, 1893, for the purpose of instructing approved candidates for admission to the medical corps of the army in their duties as medical officers.

The school is at present conducted in a building rented by the Government, but a new building, erected on the Walter Reed Hospital grounds, is

Fig. 6. Walter Reed Hospital—Female nurses' quarters. (See text for interesting reference to old tree trunk.)

contemplated, in accord with the original project. This will be most valuable because of its close association with the hospital. In the beginning of the school the student officers were the recently commissioned first lieutenants of the medical corps. The plan to first commission the officer and then assign him to the school was not satisfactory. Students who were found by observation to be temperamentally or otherwise unfitted for their duties as medical officers could not be eliminated except by dismissal following a court-martial. Legislation has since made it possible to assign approved candidates to the school with the rank of first lieutenant in the medical reserve corps, a position the tenure of which may be terminated by the secretary of war at any time. The candidate is not commissioned in the regular army until he has completed the school course and the faculty is satisfied that he is qualified mentally, morally, physically, and temperamentally to perform the duties of a medical officer of the army.

The school consists of the school board, the students, and such enlisted men of the medical corps of the army as may be assigned to it for duty. The object of the school is to train the students in such subjects as are appropriate to the duties which an officer of the medical corps of the army may be called on to perform.

Fig. 7. Walter Reed Hospital—Rented quarters for United States army medical school.

Students are given every facility and encouragement to develop professionally. Instruments and appliances are liberally supplied for their use in the performance of their duties. A well-selected professional library is furnished, and standard modern publications on medical and surgical subjects are added from time to time. The subjects taught in the school are at present as follows:

Military surgery; medical department administration; military medicine and tropical medicine; military hygiene; bacteriology, pathology, and clinical diagnosis; ophthalmology; sanitary chemistry; sanitary tactics; operative surgery; radiology.

In addition to the foregoing the following instruction is given:

Equitation, on one afternoon a week, at Fort Meyer, Virginia, by an officer of the cavalry service; a series of lectures on psychology at the Government hospital for the insane by the superintendent of the hospital; a series of lectures on military law by an officer of the Judge Advocate General's Department, United States army; one or more lectures by each of four distinguished members of the medical profession, on the inactive list of the medical reserve corps, on topics chosen by the lecturer.

A very accurate idea of the scope of the work done at the army medical school may be obtained from the annual report rendered by Colonel Charles Richard, United States army, commandant of the school, to the surgeon-general of the army for the school year ending May 31, 1893.

The following is the faculty: commandant, Colonel Charles Richard; adjutant, Major Reuben B. Miller; military surgery, Colonel Charles Richard; medical department administration, Lieutenant-Colonel James D. Glennan; military medicine and tropical medicine, Lieutenant-Colonel C. C. McCullough, Jr.; ophthalmology, Major Theodore C. Lyster, Capt. Edward M. Talbott; military hygiene, Major William J. L. Lyster; bacteriology, pathology, and laboratory diagnosis, Major Eugene R. Whitmore, Captain Edward B. Vedder, Captain Mathew A. Reasoner; sanitary chemistry, Major Reuben B. Miller; sanitary tactics, Captain Perry L. Jones; operative surgery and roentgenology, Captain Arthur C. Christie; psychiatry, Captain Thomas D. Woodson; all of the Medical Corps, United States army.

THE PLACE OF THE HOSPITAL IN PREVENTIVE MEDICINE.

To Keep People Well More Important Than to Cure Those Who Are Ill—Early Attention to Beginning of Disease the Future Vital Function of Hospitals.

By EUGENE L. FISK, M. D.,
DIRECTOR OF HYGIENE, LIFE EXTENSION INSTITUTE, NEW YORK.

IT was recently my privilege to visit and inspect a magnificent Canadian hospital that had just been completed. Subsequently, in an interview with one of the attending surgeons, I expressed great admiration for the hospital, but remarked that I regretted that it was not about half the size. This excited the surprise of the surgeon, who wished that it might have been double the size, until I explained that I was sorry that there were so many sick people who required hospital treatment, and that I wished that the need for the hospital might have been half as great.

When we reflect more deeply on this question, however, we may see an even greater need for hospitals as the morbidity in the population decreases. A hospital, like a physician, may become an important factor in the prevention of serious maladies by early and thorough hospital treatment.

Many chronic diseases can be controlled and checked in their early stages. By early hospital operation many chronic surgical conditions, now woefully neglected, will be remedied and essentially preventive work will be done.

The mortality rate from cancer in the United States registration area has increased 57 percent since 1890. No one with any knowledge of the facts can doubt for one moment that a very large proportion of this mortality rate is due to neglect of a precancerous or early cancerous condition.

How many cases of "chronic indigestion," really due to gall bladder trouble, duodenal ulcer, or chronic appendicitis, would be benefited by early hospital treatment?

It seems justifiable, therefore, to look forward to the time when our hospitals will not be so much the mournful repositories of hopelessly broken-down wrecks, as the repair shops where human machines are taken for strengthening and repair before the hopeless breakdown occurs.

This is the insistent note in modern medicine, and it may be said without exaggeration that the profession is remoulding itself along these lines. The hospital of the future, like the physician of the future, will find an ample sphere in keeping people well, in administering thoroughgoing scientific treatment or furnishing systematic guidance and supervision for impaired or potentially impaired humanity.

Although preventive medicine is still in the early stages of growth, there is even now a wealth of knowledge on these subjects and an abundant equipment for doing effective work in prevention, if people who are below par and head-

ing for disease or impairment can be brought under medical supervision.

Some systematic method of reaching these people is required. There could be no better method than periodic health examination at least once a year for the purpose of detecting any departure from the normal and giving the individual an opportunity to have the necessary corrective measures applied.

Dr. Victor C. Vaughan well expressed this principle in his address before the American Medical Association in June:

"If preventive medicine is to bestow on man its richest service, the time must come when every citizen will submit himself to a thorough medical examination, once a year or oftener."

Dr. S. S. Goldwater, health commissioner for New York City, has even suggested that this be made a governmental function, and he has himself applied the principle in his own department by having his employees examined periodically. Employers of labor and life insurance companies are awakening to the possibility of such a system. The most widespread employment of this system is now in the life insurance field.

In January last a group of scientists, publicists and business men became impressed with the possibilities of such a system, and joined to form the Life Extension Institute, whose purpose should be a reduction of the general death rate and an improvement in the general physical fitness of the population, through periodic physical health examinations and educational propaganda for the purpose of spreading a knowledge of personal hygiene. Ex-President William H. Taft became chairman of the Board of Directors, General Wm. C. Gorgas, consultant in sanitation, and Prof. Irving Fisher chairman, of a Hygiene Reference Board of about one hundred eminent scientists.

The Life Extension Institute has contracts with a number of leading life insurance companies for the periodic reexamination of their policy holders in order that disease conditions may be discovered in time to check or cure them. The same service is supplied to employers of labor, banks, trust companies, industrial and manufacturing concerns, and also to individuals in the general public. The privilege is now regularly extended to more than 150,000 people.

The work thus far done shows the emphatic need for such a service. About 95 percent of those examined required at least some suggestion regarding the care of their health. If they were not physically impaired, there was some error in living habits that required correction lest in time it should undermine health. About 65 percent of these people were sufficiently impaired to actually need medical attention, and were referred to their physicians for treatment.

The economic value to the medical profession of such work must be at once apparent. Vast numbers of people are drifting around aimlessly, falling victims to quacks, patent medicine vendors and faith cures. Many of these people have been rescued from their own neglect or mismanagement, and handed over to scientific medicine for treatment. Many who have not required actual medical treatment have received instruction and suggestions in right living.

One important fact brought out by these examinations is the steady encroachment of the diseases of the cardiovascular system. In a group of some thousands of employees examined in New York City at an average age of 30, 13 percent were found suffering from some thickening of the arteries, showing that in many instances the preparation for cardiovascular failure in middle life begins in youth. These diseases are heavily on the increase in the population, and it is of extreme importance to detect their early signs and so control the manner of life that these tendencies may be checked.

These examinations disclosed many surgical conditions that required attention, such as chronic appendicitis, gall stones, and especially neglected hernia.

The Institute has examining physicians listed throughout the United States and Canada, whereever competent physicians are available.

There has been a most gratifying spirit of cooperation manifested by these examiners, who appreciate that the Institute is performing for the public, and for the profession as well, a service which it has heretofore been nobody's business to perform.

Typhoid Decreasing in This Country.

Surgeon General Rupert Blue, of the public health service, in his annual report, says public health officers who examined persons who come in contact with migratory consumptives found little reason to believe that such contact has proved injurious. It is again suggested that investigation by American officials does not bear out the claims made by Dr. F. F. Friedmann for a specific for tuberculosis. Investigation of the Von Ruck treatment for the same disease, the report says, is incomplete.

Speaking of typhoid, Dr. Blue says that although its prevalence in this country is being gradually reduced and the rate is not more than half what it was thirty years ago, it still is higher than in some other advanced countries. The urgent need is rural sanitation.

Study of the use of drugs in this country, where antinarcotic legislation has made statistics available, Dr. Blue says, leads to the belief that the users of morphine and opium in this country probably do not number more than one hundred and forty thousand.

A PROPOSED METHOD OF HOSPITAL STANDARDIZATION.

Functions of the Modern Institution—Efficiency Defined—Scientific Management Needed—Ideals Defined—Standards and Schedules—Agencies at Work on the Problem—A Suggested Plan of Procedure.

By RICHARD WATERMAN,

SECRETARY COMMITTEE ON HOSPITAL EFFICIENCY OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

THE hospital of today occupies a very much broader field of work than did the hospital of a century ago. Its functions include not only the care of the sick, but also the prevention of disease, the scientific study of causes and the treatment of disease, and the systematic education of doctors, nurses, and the public. In order to perform these functions properly, the hospital has been obliged to erect an elaborate plant; to provide a great diversity of expensive equipment; and to supplement the efforts of its unpaid scientific staff by employing a special staff of highly paid experts in both the scientific and the business departments.

MAGNITUDE OF THE PROBLEM.

A brief summary of the financial and operative statistics of the hospitals in the United States may serve to emphasize these statements. THE MODERN HOSPITAL for September, 1913, says, "There are in the United States 6,665 institutions of record for the care of the sick, with a total capacity of more than 600,000 beds. By a modest estimate these huge figures represent a money investment in land, buildings and equipment of not less than $1,500,000,000, and an annual outlay for maintenance approaching $250,000,000.

"On the human side there are more than 100,000 trustees of hospitals and more than 65,000 physicians on hospital medical staffs. About 10,000,000 men and women contribute annually to the hospital funds and approximately 9,000,000 men, women and children are patients in the hospitals in the course of each year."

WHAT IS HOSPITAL EFFICIENCY?

The fundamental idea in efficiency is the elimination of waste. A hospital is efficient if it thoroughly performs its functions—the care of the sick, the prevention of disease, the research work and the education of doctors, nurses and the public—with the least possible waste of labor, materials and money. There is an enormous amount of waste involved in the present methods of operating hospitals. The waste of money probably amounts to more than 20 percent of the $250,000,000 paid each year for current expenses; and there is in addition a waste of human labor and opportunity that is incalculable.

We waste the time of our trustees when we fail to adopt a system of financial records and reports that will enable the superintendent of the hospital to present to the board at frequent intervals an intelligent statement of the work done and the unit cost of the work.

We waste the time of members of the medical staff when we fail to provide the facilities that will enable them to do their work properly. The most eminent specialists give their services to the hospital without charge; and when they are unable to do their work for lack of suitable equipment it is just as truly a waste of time and of opportunity as it would be if they were receiving a large professional fee.

We waste the time of our nurses when we require them to learn a dozen different ways of doing their work in the operating room or in the wards, because we have not discovered the one best way of doing the work and adopted it as the standard method of procedure.

We waste a large amount of money when we provide for the construction and equipment of hospitals where they are not needed; and at the same time we throw away the opportunity to construct and equip new hospitals where they are needed.

We waste a large proportion of the first cost of construction and of the annual cost of maintenance of our hospitals when we fail to make ourselves familiar with the experience gained by others. For example, a large American city has recently completed the erection of a municipal hospital at a cost of nearly $6,000 a bed. The best experts agree that this is twice as much as it should cost; and also that the arrangement of the buildings will make the annual cost of maintenance from 50 to 60 percent more than is necessary.

We waste a great deal of money when we buy useless equipment without investigation, merely because it has been recommended by some prominent member of the staff; and when we duplicate expensive equipment many times over in neighboring hospitals and then allow it to lie idle the greater part of the time. No corporation that is organized for profit could afford to do this, nor can a hospital afford to do it.

We waste a considerable part of the money spent in the purchase of medical, surgical and household supplies. In every hospital about 60

percent of the cost of maintenance goes for supplies, and about 60 percent of these supplies could be bought to good advantage through a properly organized central purchasing bureau.

We waste at least half of the money that we spend to maintain beds for convalescent patients in a hospital for acute cases. It is well known that the per capita cost in a convalescent home is less than half the per capita cost in an acute hospital.

We waste a great deal of money by failing to devise and adopt a good system of serving food to the patients. In one large hospital that has a very high reputation the food is handled seven times and reheated twice between the kitchen and the patient's bedside; and in one 24-bed ward the number of trays on which food is left untouched has been known to be as high as 33 percent.

We waste a great deal of time and money in our dispensaries when we admit a large number of patients who take a great deal of the time of the dispensary physicians for preliminary examinations at which a careful diagnosis of each case is made, and later when we fail to take the necessary steps to insure the return of these patients after their first visit. For example, one large dispensary shows in its report for 1914 that in a certain clinic 45 percent of the patients paid only one visit, and adds that "not all the work done for these patients was wasted, but most of it was."

We waste a large amount of money and human effort by failing to coordinate the various departments of the hospital, and by failing to establish recognized lines of authority so that we can direct the work of every person connected with the hospital along such lines that it will be of the greatest service.

HOSPITAL MANAGEMENT CAN BE MADE SCIENTIFIC.

An enterprise that spends $250,000,000 a year for current expenses is a large business undertaking and should be managed in accordance with sound business principles, and yet it is true that very few trustees are prepared to apply the same principles in the management of a hospital that every business man applies, as a matter of course, in the management of his own business.

In these days of scientific management every progressive business man is studying the principles of efficiency. He knows that in his own business it pays to have a planning department that will help him to make sure that his staff is so organized, his buildings and equipment so arranged, and his financial and operative statistics so prepared that the work done will be as economical and as efficient as possible.

The business man should also realize that he can insure efficiency in the management of the hospital of which he is a trustee by precisely similar methods. A few hospital boards and hospital superintendents are already convinced on this point, but the great majority are still in doubt. This is largely due to the fact that there is at present no authoritative statement of the fundamental principles of hospital efficiency or of the general method of applying those principles.

In the absence of such a statement, it may be of service to present here a brief outline of the principles of efficiency which are applicable in every field of human activity—business, professional, governmental, educational, and philanthropic—and to show by a few concrete illustrations how these principles can be applied in the scientific departments of the hospital as well as in the business departments.

PRINCIPLES OF EFFICIENCY.

Mr. Harrington Emerson, one of the foremost efficiency engineers in the United States, has formulated the following list of the fundamental principles of efficiency: (1) Clearly defined ideals; (2) common sense; (3) competent counsel; (4) discipline; (5) the fair deal; (6) reliable, immediate, and adequate records; (7) dispatching; (8) standards and schedules; (9) standardized conditions; (10) standardized operations; (11) written standard practice instruction; and (12) efficiency reward. Each of these principles really is fundamental and should be given careful consideration by trustees who desire to make the management of their hospital efficient.

CLEARLY DEFINED IDEALS.

The ideals for which the hospital is working should be clearly defined. A few years ago the hospital confined its attention to the treatment and care of people who were already sick. Today, in addition to caring for the sick, it devotes a great deal of attention to keeping people well. A few years ago the average hospital made no effort to follow discharged patients into their homes in order to measure the results of hospital treatment. Today, in many of our best hospitals, the "follow-on" system is an important part of the work. A few years ago, no systematic effort was made to add to the medical diagnosis and medical treatment a social diagnosis and systematic treatment by a trained social worker. Today there are hospitals and dispensaries where the social worker is as much a part of the clinic as is the doctor or the nurse.

COMMON SENSE.

The hospital should use a reasonable amount of common sense. For example, it should avoid the

unnecessary purchase of costly apparatus. At the present time it frequently happens that the expensive equipment needed to facilitate diagnosis and treatment is duplicated many times over by neighboring institutions. This results in extravagant expenditures and a great deal of preventable waste.

COMPETENT COUNSEL.

The hospital should seek expert advice when necessary. It is not possible for each of the 6,700 hospitals in this country to include as permanent members of its staff all of the specialists whose advice will be needed at one time or another. Each must, therefore, be prepared to employ competent counsel when needed: a hospital consultant to help in planning new buildings; an expert accountant to devise and install a system of financial records and reports; an efficiency engineer to discover and eliminate every form of preventable waste, and so on.

DISCIPLINE.

The hospital should enforce discipline in all parts of its organization. Rules governing the treatment and care of the patients and the general conduct of the hospital should be clearly defined by the board of managers and placed in the hands of each member of the administrative, the medical, and the nursing staff; and these rules should be enforced.

THE FAIR DEAL.

The hospital should give a fair deal to its patients and to the public as well as to its contributors, its managers and its staff of doctors and nurses. The fair deal requires that the interests of the patient treated in the hospital or in the dispensary shall be protected by making sure that in each case the physician or the surgeon in charge is really competent to do the professional work involved. The fair deal requires that the interests of the contributor who is asked to support the hospital shall be protected by giving him some assurance that the money he contributes will be used to good advantage. The fair deal requires that the interests of the doctor who contributes his services shall be protected by giving him, as far as possible, the facilities he needs in order to perform successfully his part of the hospital work.

RECORDS.

The hospital should keep reliable, immediate, adequate, and permanent records. The system of medical records should be such that it will aid the staff, not only in their treatment of the patients, but also in preserving the history of each case in such a form that it will be available for use in the future as a record of experience and as an aid to teaching. The system of financial records and statistics should be such that it will enable the hospital executive to lay before the board of managers at frequent intervals a clear picture of the work done and the unit cost of this work, and will afford a common basis for the comparison of each hospital with every similar institution throughout the country.

DISPATCHING.

The dispatching of patients in a hospital should be just as prompt and systematic as the dispatching of trains on a railroad. A patient who applies for admission to the hospital should be examined promptly by the admitting officer, assigned at once to the proper room or ward, and seen within a reasonable period by the visiting physician or surgeon on service; and the instructions given by the visiting physician in regard to treatment and care should be carried out promptly and thoroughly by the other members of the medical and nursing staff.

STANDARDS AND SCHEDULES.

The hospital should establish definite standards by which to measure the economy and the efficiency of its work. One institution may have a per capita cost of $3.00 per day and another may boast of a per capita cost of $1.10 per day. It is necessary to establish some definite standard by which to measure the per capita cost before we can determine whether it is a credit or a disgrace to have a per capita cost of $1.10. One dispensary physician may treat twice as many patients in an afternoon as his colleague who is working under similar conditions. It will be necessary to know that he treats them with equal success before we can say that he is twice as efficient as his colleague.

STANDARDIZED CONDITIONS.

The hospital should standardize the conditions under which its work is done—i. e., it should make a scientific study of the results of experience in many hospitals in order to determine the conditions under which each class of patients can be cared for with the highest degree of success; and should then provide in each department the facilities indicated by the results of this study. For example, the principal service rooms should usually be located as close to the wards as possible. In one hospital these rooms are so close to the wards that the number of steps the nurses take in order to do their daily work is reduced to a minimum. In another hospital the nurses are required to go to the other end of a long corridor every time they need to use the diet kitchen, the sink room, or the duty room.

STANDARDIZED PLAN OF OPERATION.

The hospital should standardize its plan of operation. A few years ago, in one of the leading hospitals of this country, which has been used as a model by many other institutions, there were thirty-three members of the staff who had authority to admit patients. In the same institution today there are only two members of the staff who have this authority—an admitting officer and his assistant. In some hospitals the medical records for each service and for each dispensary clinic are kept in a different place and are not cross-indexed. In a few of the more modern institutions the hospital, dispensary and social service records are all consolidated, and it is possible to find in one place a continuous medical history of each patient from the time that he was first admitted to any department of the hospital.

WRITTEN STANDARD PRACTICE INSTRUCTIONS.

The hospital should define clearly the rules and regulations governing the ordinary procedure for every department so that even when there are frequent changes in the personnel of the medical staff, the nursing staff, or the administrative staff the policy and the practice of the hospital will be continuous.

EFFICIENCY REWARD.

The hospital should give a suitable reward for efficiency in every department of its work. In the business departments, for example, the amount of compensation paid to employees should be determined by applying the same standards that would be applied in any well managed commercial enterprise. In the scientific departments the professional recognition given to a member of the staff should be, as far as possible, directly proportional to his professional success. In many hospitals this principle is not recognized, and promotion is made to depend not on efficiency, but on seniority of service.

PLANS FOR INCREASING THE EFFICIENCY OF HOSPITALS.

Many different plans have been proposed with a view to increasing the efficiency of hospitals in the United States—either individually or collectively. The American Medical Association has established a hospital section and has appointed a Committee on the Standardization of Hospitals. The Clinical Congress of Surgeons of America has appointed a similar committee, which submitted a report in November, 1913, making certain definite recommendations. The American Hospital Association has urged for years that a comprehensive study be made and that plans be developed for the classification and standardization of all of the hospitals in the United States, and at each of its annual meetings has appointed standing and special committees to report on various phases of hospital efficiency. All three of these organizations have urged the Carnegie Foundation to prepare a report on the classification and standardization of hospitals—a report that would perform as great a service for the hospitals of this country as the report on "Medical Education in the United States" has already performed for the medical schools.

SATISFACTORY PLAN NOT YET FORMULATED.

The committees of these various organizations are now trying to formulate a satisfactory plan for accomplishing the purpose for which they were appointed. They realize that they must propose a plan that will not be objectionable to the hospitals; and one that it would be possible for some properly constituted agency to carry out, provided it is willing to undertake the work and to assume the necessary expense.

It is not possible to make an individual study of each case of the 6,700 hospitals in the United States and present the results in comparative tables. It is not possible to grade the hospitals, saying "this hospital is in class A," and "that hospital is in class C"; nor is it desirable to do so. It is not possible to set up an arbitrary standard which every hospital must attain if it is to be regarded as a reputable institution. And yet these are some of the suggestions that have been urged as essential parts of any proposal looking towards the classification and standardization of hospitals.

SUGGESTED PLANS.

It is possible to define the terms "classification" and "standardization" in such a way that under the definition both the classification and the standardization of hospitals in the United States can be accomplished, if sufficient resources are provided for the purpose.

For example, the American Hospital Association or the Carnegie Foundation or some other properly constituted authority might undertake—

(a) To prepare a schedule for the classification of hospitals providing for a number of different groups, each of which would include those institutions which are sufficiently similar to be comparable.

(b) To make a study of all the teaching hospitals in the country and, in addition, to study a few typical institutions in each group included in the proposed classification, but to make no attempt to grade each hospital or to measure its efficiency as compared with other institutions.

(c) To define standards by which to measure efficiency in each of the proposed groups so as to

make it possible for the managers of any hospital to apply the standards themselves and to measure the efficiency of their own institution.

(d) To include in the report a study of the work done by hospitals for the education of doctors, nurses, and the public.

VALUE OF PROPOSED REPORT.

A report developed along the lines suggested would be of great service to the hospitals, the medical schools, the nursing profession, and the public. It would be of service to the hospitals because it would enable each institution to measure its own efficiency and would present constructive plans for increasing the efficiency of those institutions which do not measure up to the standard.

It would be of service to the medical schools since it would help them to develop more effectively that side of their work which must be done in a teaching hospital.

It would be of service to the nursing profession since it would define standards for the training schools for nurses and show them what is generally recognized as the proper course of study, the necessary equipment, and the desirable facilities for a training school for nurses. This part of the report would have a very wide application, since a majority of the hospitals in the country have training schools for nurses. Many of them are sending out each year large classes of young women who are allowed to become graduate nurses and to enjoy all of the privileges of the profession without having received an adequate training for the work.

It would be of service to the public since it would make clear the necessity for including in the organization of every hospital some provision for protecting the interests of the patients. It is an acknowledged fact that some of the best medical work and some of the worst is done in hospitals, and it is very desirable that some steps should be taken to enable the public to determine which hospitals are entitled to their confidence.

CLASSIFICATION OF HOSPITALS.

The proposed schedule for the classification of hospitals would provide for a number of different groups. It is obviously unfair to compare a large general hospital in New York with a thirty-bed hospital in some small interior town, or a contagious disease hospital with a hospital for incurables, or an insane hospital with a children's hospital; but it is quite possible to group these institutions in such a way that those which are grouped together can be compared.

STUDY OF HOSPITALS.

The proposed study of hospitals should result in a report that will present the essential facts

(a) In regard to the number of hospitals in the United States, the number of patients treated, the number of managers, doctors and nurses actively engaged in the work, the amount of money invested, the amount of money expended each year for maintenance, and other data that can readily be obtained from recognized sources of information.

(b) In regard to each of the teaching hospitals in the United States showing what it does for the education of medical students, for the further education of members of the medical profession, and for the movement to add to the available knowledge of the causes, the prevention, the diagnosis, and the treatment of disease.

(c) In regard to the educational work done by hospitals where nurses are taught in the training school for nurses, in various departments of the hospital, and in various dispensary clinics; and where the public is taught by hospital and dispensary physicians, by lecturers and teachers in the out-patient departments, by social service workers and by the publication of suitable material in the form of annual reports, special publications, and articles in the periodical and daily press.

(d) In regard to a few typical hospitals in each group included in the proposed classification.

STANDARDIZATION OF HOSPITALS.

The suggested plan makes provision for defining standards by which to measure the efficiency of a hospital in any one of the groups in the proposed classification. These standards, when defined, will help the trustees of any hospital in the country to answer the following questions in regard to their own institution:

(a) Is the organization of our hospital efficient?

(b) Is the management scientific?

(c) Are the buildings so planned that the hospital can avoid preventable waste?

(d) Is the equipment such that it is possible for the hospital to do the best work?

(e) Does the hospital spend a sufficient amount of money each year to insure good work?

(f) Are the medical and financial records kept in a form that will enable the trustees to measure the amount and quality of the work done and the unit cost of the work?

(g) Do the social service and "follow-on" systems enable the medical staff to ascertain the end results of their work?

(h) Are the physicians and surgeons getting as good results as they should in the treatment of their patients?

(i) Does the hospital cooperate actively with

the public authorities and with various private institutions and agencies to protect the health of the community?

CENTRAL HOSPITAL BUREAU.

The proposed study of hospitals should result in establishing, under the auspices of the American Hospital Association, a Central Hospital Bureau, that

(a) Will place within the reach of every hospital in the United States the latest information in regard to hospital organization, management, construction and equipment.

(b) Will make the necessary tests and establish standards of quality and price for the medical, surgical and household supplies ordinarily used in our hospitals, and will thus help every hospital—large or small—to save the money now wasted in purchasing supplies without a full knowledge of current market conditions. This would result in a very substantial saving, since the present annual cost of the supplies used in American hospitals is about $150,000,000.

(c) Will help to develop a community program for hospital work with a view to preventing the unnecessary duplication of expensive equipment and the overlapping of work that have proved so wasteful under the present system.

(d) Acting in an advisory capacity, will aid individual hospitals in their efforts to increase their own efficiency and to make the best use of the funds entrusted to their care.

The proposed Central Hospital Bureau, with its skilled organization, its complete hospital information, its modern systems of investigation and record, its staff of hospital consultants, expert accountants and auditors—all at the service of each hospital—will make it possible for the smallest institution to be conducted with the same precision and skill as the largest, and for all of them to effect a great saving in their expenditure of time, money and human effort.

THE HOSPITAL X-RAY LABORATORY—ITS SCOPE AND LIMITATIONS.[1]

The Working Force and Duties of Each Person—Reports on Cases—Location of Laboratory—Plans of Space for Different Size Hospitals.

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PAPER II.

THIS routine carries out the objects and purposes of an x-ray laboratory, and it is only by following this or a similar routine that any method or system can be maintained. For in a well-organized laboratory each worker, from the medical director to the orderly, has particular tasks and duties, and there is a particular time in which this or that task is to be performed.

It will be at once apparent that since there are numerous and varied tasks and duties to be performed, a certain amount of division of labor becomes necessary as the laboratory attains any considerable size.

WORKING FORCE.

In a general way, it may be stated that the average hospital, doing roentgenographic work according to modern standards, will examine during the year a number of patients equal to five times the number of beds. Thus, a hospital of one hundred and twenty beds will normally examine about six hundred patients a year, of which about twelve hundred plates will be made. A hospital of three hundred beds will examine fifteen hundred patients a year, of which about three thousand plates will be made, etc., while about sixty-five hundred patients should normally be examined with twelve thousand plates in a hospital of thirteen hundred beds. A ratio of about nine plates to every five patients obtains in most hospitals. Generally speaking, therefore, laboratories may be divided into three classes—small, medium, and large.

In a small laboratory with a normal service of six hundred patients or less, it is possible for the entire work to be done by one individual; but under these circumstances a daily attendance in the laboratory for at least five hours is necessary.

In larger laboratories this becomes almost impossible and an increase in the working staff becomes imperative, the increase being in proportion to the size and variety of service.

The director of the laboratory should in all cases be a medical man, who has devoted himself to roentgenology as a specialty. It is difficult to mention a specialty which requires so considerable and varied an experience and knowledge, so thorough a fundamental education, and so com-

[1]This is the second of three papers on The Hospital X-ray Laboratory, by Dr. Hirsch. Third installment next month.

prehensive a view of medicine and surgery as does this art of clinical diagnosis.

The working staff may be increased by the addition of the following:

1. Photographic assistant to assume charge of all the dark-room activities.

2. The nurse to assist in the preparation of the patient for examination, and to act as executive secretary, assuming charge of the records, filing, indexing, etc.

3. Technician to make the plate examination and keep the apparatus in order.

4. A stenographer for either part of or the entire day, for the purpose of receiving dictation on the reports of the examination and doing clerical work.

For small laboratories a nurse may be trained to perform the duties of the photographer, technician, and executive secretary, and in the majority of smaller laboratories in Europe this is done; but in the large laboratories a further division of labor becomes necessary, and this should be in the direction, first, of obtaining a dark-room assistant, and secondly, in the enlistment of the services of a stenographer.

The result of the first addition is to limit the activities of the director to the actual making of examinations, both fluoroscopic and plate, thus permitting him to give more time to work that is more properly within his sphere. The result of the second addition is to increase the value of the examinations by making for full, complete, and detailed reports, for accurate filing and cross-indexing, etc. Without this assistance, in busy laboratories, the reports degenerate into the making of mere diagnostic labels, which are frequently valueless and uninstructive, while the material itself becomes useless and a burden.

DIRECTOR.

The detailed duties of the director are:

1. General control.

2. Special work.

(a) Fluoroscopy; dictation of results to stenographer.

(b) Radiography. Though it is not essential that he make all the radiographic examinations (plates) himself, it is important that he direct the activities of the technician in each particular case. Thus, ere the examination is made, he should place brief instructions on the requisition card, because no matter how expert the technician, the director is better fitted by his medical knowledge to direct the examination. For instance, the card may, in a case of acromegaly, ask for the examination only of the head, but the director will note that the hands and feet should also be examined, for these may add additional valuable information.

(c) Reading and reporting plates.

There has been considerable difference of

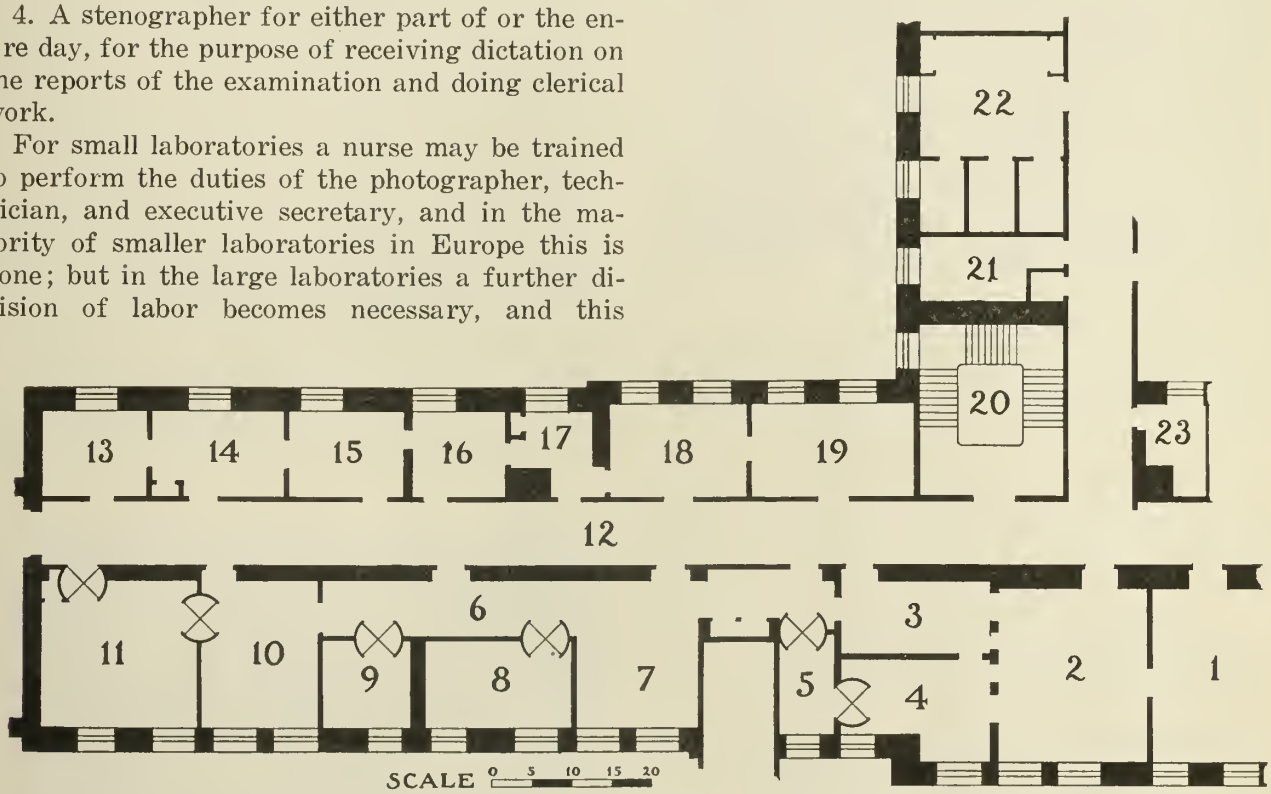

Fig. 1. Plan of new x-ray department, Bellevue Hospital, New York City. McKim, Mead & White, Architects.

1. Waiting room (light green).
2. Examining room (light green).
3. Examining room (light green).
4. Machine room and office (white).
5. Plate loading room (orange).
6. Corridor and plate storage (black).
7. Medical demonstration room.
8. Dark room (orange).
9. Print room (orange).
10. Examination room (glossy black).
11. Fluoroscopy room (blue-green).
12. Radiographic dept.
13. Fracture room (blue-green).
14. Ward (light green).
15. Kidney room (light green).
16. Operating room (buff)
17. Attendant's room (buff).
18. Office (buff).
19. Library (buff).
20. Elevator.
21. Lavatory (white).
22. X-ray therapy (light green).
23. Lavatory.

opinion regarding the nature of the reports submitted by the roentgenologist. It has been claimed by some that a report of findings in reference to shadows, etc., is sufficient, the interpretation thereof to be left to the clinician. It is this attempt to make the roentgen laboratory a mere

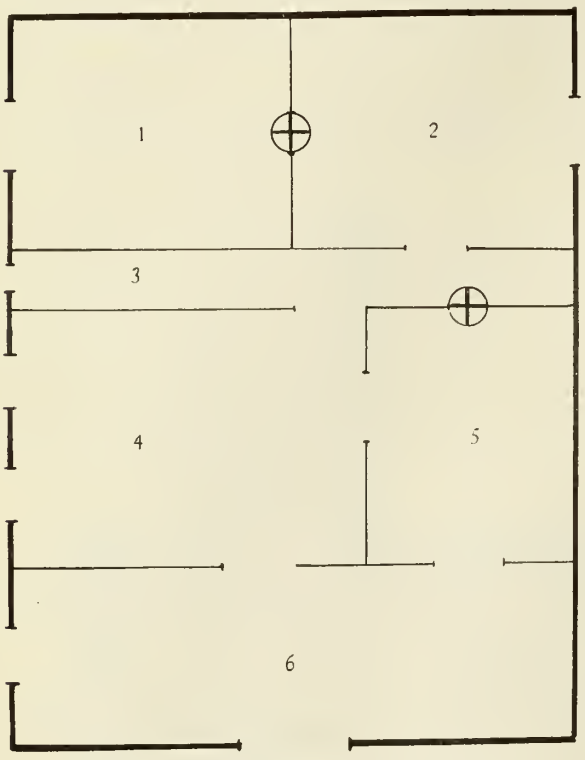

Fig. 2. Plan of medium sized x-ray laboratory.

1. Photographic room.
2. Demonstrating room.
3. Machine-operating room.
4. Examining room.
5. Fluoroscopic room.
6. Waiting room.

Solid revolving doors.

picture shop which leads nowhere, and retards the advancement of the art. The sole object of the existence of the laboratory is to produce results. The plate examination is but the means to an end—its interpretation. It is just as illogical as to request the pathologist that he confine his activities to the cutting, staining, and mounting of the specimen, and leave the diagnosis to the clinician.

The report should consist of:

1. Description of the plate shadows.

2. Interpretation in the light of recognized accepted findings.

The roentgenologist should know not only the limitations of his art, but his own limitations, and should curb his zeal and enthusiasm and remember that scientific caution is more impressive than brilliant though unfounded generalization.

Would that it were possible to institute the methods of the German clinics in our x-ray departments! The surgeon and staff at a certain hour daily visit the department, bringing with them the clinical history of the cases. These are read and discussed in the light of x-ray findings, and the necessary additional examinations are made and conclusions reached.

Blessed, indeed, is the roentgenologist who has this support and interest of his medical staff. The inspiration they are capable of giving is incalculable and the appreciation of his efforts is a constant stimulus, which will spur him on to greater effort and activity. Appreciating that roentgenology is not a finished art, and that it is only by clinical and pathological correction and elucidation that definiteness and accuracy can be reached and the true value of the examination established, he will welcome constructive criticism and helpful correction. Only by the combined effort of the medical staff and the roentgen-ray laboratory will anything permanent be accomplished.

Difficult is the task, however, of him who must fight for an appreciation of the diagnostic value of the method in the face of scepticism and ignorance. But his eventual reward will then be all the greater. Indeed, I have known an alert, progressive roentgenologist to rouse a somnolent medical staff into activity by his discreet questioning of clinical diagnosis and by careful analysis of the material.

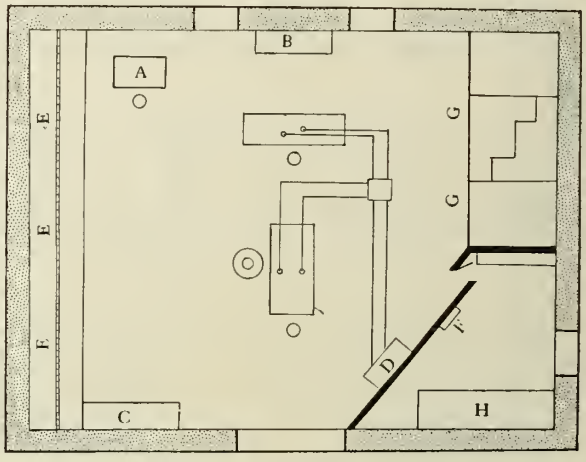

Fig. 3. Plan of a simple arrangement of x-ray laboratory in one room.

A Desk.
B Tube closet.
C Supply closet.
D Transformer.
E E E Illuminating boxes and files.
F Switch board.
G G Developing, fixing, and washing tanks.
H Plate closet and shelves for loading.

Studied, confidential, and cordial should be his relations to the superintendent. No progress will be made unless he is taken into the director's confidence and is kept fully acquainted with the purposes, the routine, the working of the laboratory, and with the progress of the art. The aim should be to make the attitude of the superintendent one of encouragement and support and his feeling one of pride in the equipment and efficiency of the laboratory. Arrogance and stubbornness on the

part of the director will bring nothing but endless annoyance and clogging opposition.

For instance, if it is the desire to obtain for the laboratory the fastest plate on the market (though its price be much higher than the slowest), actual proof that it makes for eventual economy because of saving of tubes, better radiographic results, shorter time spent in the dark room, etc., will accomplish more than insistence and dogmatism.

In regard to the relations of the laboratory director to the hospital organization as a whole, it is important for him to remember that he is only a small part of a vast machine, and that it is well to run silently and without friction.

When a director has so coordinated and arranged his activities as to have gained the support and interest of the medical staff and the superintendent, and has made the laboratory play an important part in the clinical activities of the hospital, he may consider that he has attained efficiency. The director of the laboratory should in all cases receive remuneration of a substantial sort so that he may give his time and unstinted attention to his work. This remuneration may be obtained either directly from the hospital or indirectly from the examination of the private patients of the hospital.

Fig. 4. The examination room, x-ray department, Bellevue Hospital, New York City, showing the three working units. To the left, the table and tube stand for examination of patients in the horizontal position. In the center, the vertical tube stand arrangement to examine the upper extremity of walking patients. To the right, a vertical arrangement for the making of plates of chests and stomachs. The tube stand here may be slid out for a distance of six feet for special plate examination.

ACCOMMODATIONS.

The space devoted to the x-ray department should be ample. In most American laboratories the space is entirely inadequate. The tendency exists to put the x-ray department in the most out-of-the-way, inaccessible, and unsanitary part of the building. In the location of the x-ray department there are two points to be considered:

1. The outdoor patients.
2. The hospital patients.

In the hospitals abroad there are frequently two distinct departments, one for the outdoor and one for the hospital patients. In fact, the particular medical and surgical services have for themselves each a special department. This, however, does not obtain even in the largest American hospitals,

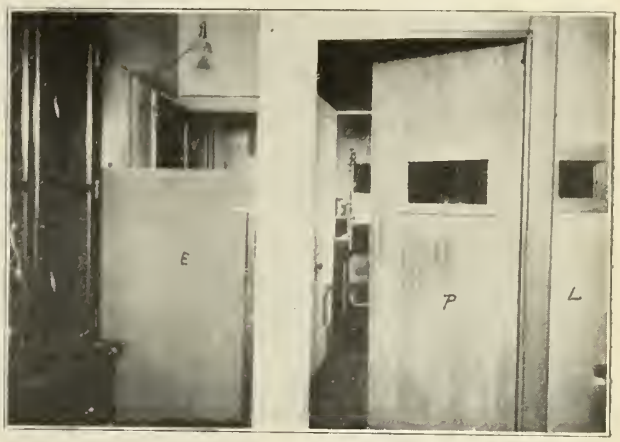

Fig. 5. Showing lead wall (L) and leaded partition (P) between the machine-operating room (A) and the examining room, behind which the operator retires while the exposures are being made. Lead glass windows permit inspection of the examining room, while a lead glass shield on the tube stand is also of assistance in cutting off incidental rays. Dressing room (E) is placed between fluoroscopic room (B) and the examining room, which is in front and is shown in the other photograph.

and perhaps it is better so. Centralization, I believe, on the whole, if accompanied by the necessary organization, makes for greater efficiency, greater economy, and more accurate and uniform results.

It will at once be seen that it would be an error to place the department in such a part of the hospital as to make it necessary for outdoor and dispensary patients to wander through the halls and ride in the elevators to reach the laboratory. Again, it is a hardship to trundle patients on stretchers in wintry gales and driving rain across courtyards to the laboratory. The department should be placed in close proximity to the wards, the center of the hospital's activities, so as to make it easily accessible to both patient and attendant. The ground floor is, therefore, usually the best, and the site should be as close to the elevator as is possible. In such a location the department is made accessible to all from without, is convenient for the administration, for the wards, and for the delivery of supplies.

There are three phases to the roentgen examination:

1. The making of the plate.
2. The developing of the plate.
3. The reading of the plate.

Therefore there are necessary—

1. The examining room.
2. The photographic dark room.
3. The demonstration room.

Under certain conditions, when only one large room is available, it is an error to divide it into small rooms, for it only adds to the general inconvenience and interferes with light and air. One such room may be fitted to do all the work necessary, as in Figure 3 (page 94). Such an arrangement undoubtedly has inconveniences, among which are:

1. The impossibility of utilizing this room for radiographic or demonstration purposes while development of plates is taking place.

2. The impossibility of developing the plates while examination or exposures are being made.

But in small laboratories where but little work is done and definite hours for the various activities established, this arrangement may well be adopted. From this simple arrangement of *multum in parvo* expansion and extension may be carried on to overcome the disadvantages.

BELLEVUE HOSPITAL.

Date	Case No.	Name	Age	Division No.					Ward	Clinical Diagnosis	RADIOGRAPHS							Notes
				M	S	G	D	O			Part	Position	Tube	Exposure	Mill	Plate No.	X-Ray Diagnosis	

Fig. 6. Second book. This book is so arranged as to enable a detailed record of each individual case, including all the data incidental to the exposure, to be entered, and the clinical as well as the x-ray diagnosis. The names are indexed at the back of the book. The size of page is 12x14, with space for sixteen names.

The advantages and the necessity of an adjoining *Demonstration Room* at once become apparent. This room should be so placed that it is not necessary to cross the examination room to reach it.

Furthermore, the disadvantages of the above simple plan, arising from the necessity of ceasing examination while development is going on, may be overcome by the addition of a small dark room. This *Dark Room* should be placed as far from the examination room as is consistent with comfort, so as to obviate the necessity of covering its walls with lead for the protection of the plate. The demonstration room may be made to intervene between the dark room and the examination room. There would thus result an arrangement as shown in Figure 2.

PROTECTION.

The protection of the operator and all those associated with him in the department is a matter of extreme importance, though it cannot be entered into in detail here.

The worker should never forget that the x-ray is a two-edged sword, a power for much good, yet capable of dealing much harm to all those coming within its reach. It is a duty of the hospital to-

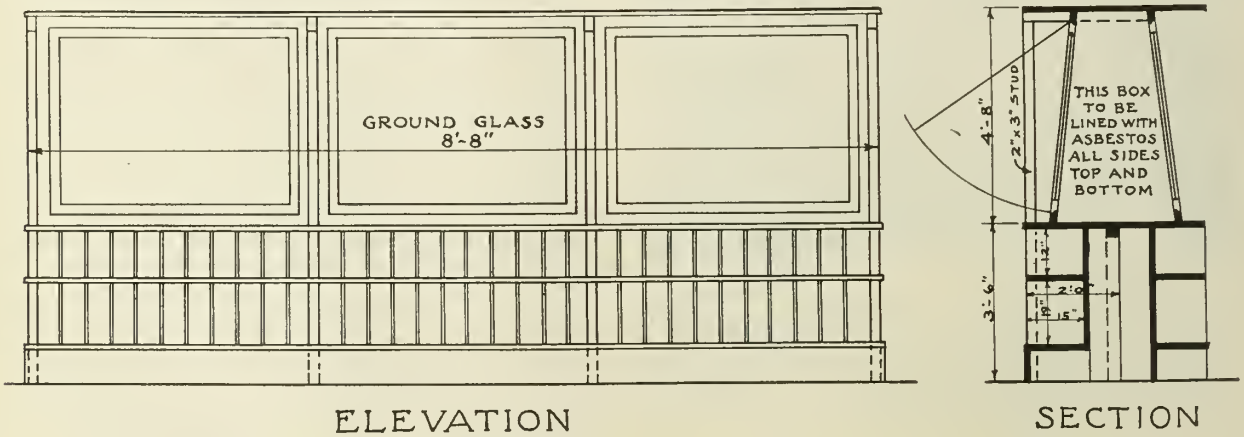

Fig. 7. Illuminating boxes for inspection of plates, with temporary filing compartments in which plates are kept from three to seven days, permitting ready examination by the house or attending staff. The plates are later transferred to the regular files.

ward their roentgen laboratory appointees to see to it that they are amply protected from any deleterious effects of the rays. Kirschberg quotes legal abstracts showing the duty of employer to employed in the protection of life and health, and says:

"It is their duty to give every protection consistent with the kind of work to be done. Towards

this end it is the duty of those in authority to provide all the necessary means of protection against the ill effects of the rays, such as lead screens, opaque aprons, and gloves."

It is sufficient to say that the best protection is afforded the operator when he is entirely out of the room containing the x-ray tube. This is accomplished by placing a small room between the demonstration room and the examination room. We may call this the *Machine-operating Room* inasmuch as from here the apparatus is manipulated, the tube regulated and the lights controlled. Within this room is also placed the interrupterless machine, as the noise of the motor tends to alarm sensitive patients and children.

In larger laboratories it frequently becomes necessary to remove the fluoroscopic apparatus to another room in order that these examinations may be made without interfering with the routine radiographic work. Under these circumstances the *Fluoroscopic Room* should adjoin the machine-operating room and examination room. In European laboratories the vast majority of the examinations are fluoroscopic, the plate being but supplementary, for purposes of record, and this form of examination is playing and is destined in the future to play an important part in the x-ray laboratory examinations, and will undoubtedly diminish the cost of maintenance.

Finally, where a large number of examinations are to be made, a waiting room for patients becomes absolutely necessary, since otherwise considerable time is wasted waiting for patients to arrive or be removed. This room should directly adjoin the examination and fluoroscopic rooms.

Thus an arrangement which covers the rooms desired in a modern laboratory will have a demonstration room, dark room, machine-operating room, examination room, fluoroscopic room and a waiting room, all so disposed as to be readily accessible and easily controlled and supervised.

Generally speaking, there are two important considerations in the construction and planning of the various rooms of an x-ray department.

1. Protection of the working staff from constant exposure to the ray.

2. Ventilation of the rooms, particularly those in which the daylight is not permitted to enter.

Even with sufficient room and protection, the roentgenologist is still liable to considerable physical injury. He should not confine himself to the laboratory for the entire day. An interval of one or two hours should occur between the morning and afternoon work, during which time he should be in the open air. The room in which the exposures are made and those which are, during working hours, kept darkened, should be exposed to the sunlight for a part of each day and thoroughly aired.

[To be continued.]

FEEDING THE HOSPITAL—THE FOOD.[1]

Certain Diseases Are the Result of Faulty Use of Food by the System, and Treatment Is Mostly Dietetic—Special Diets Are Necessary, but Must Be Used With Intelligence—Lists of Diets Prepared by the Author.

By LULU GRAVES, Dietitian Lakeside Hospital, Cleveland.

PAPER VI.

IN practically all metabolic diseases the difficulty is due to lack of systemic control of some one of the food constituents—carbohydrates, fats or proteins. As has been stated before, the nourishment of the body depends not upon the food which is eaten, but upon that which is assimilated. Food may be of the right kind, the right quantity, and be well cooked, yet the body may not be able to utilize it.

Obesity, diabetes, gout, rheumatism, uric acid affections, and all other diseases in which diet plays a large part in the treatment, may almost invariably be traced to one of the following causes—improper eating, bad hygiene, or overfatigue.

If the food is not thoroughly masticated, the particles may be so large that the digestive juices cannot penetrate them and they are not all digested; or the food may be too long in the stomach or intestines and be decomposed; in either case the digestive organs are overtaxed, and following a natural law they will eventually wear out or rebel in some manner. Overeating has the same effect; irregular eating, eating just previous to or immediately following a great mental or physical effort, interferes with digestion. The secretions of the digestive tract are affected by fatigue and such emotions as fear, anger, and grief. No doubt many "attacks" of indigestion have been brought on by dwelling upon trouble or business cares while eating.

Indigestion and constipation are apt to be fore-

[1]This is the sixth in a series of papers on "Feeding the Hospital;" last month appeared "Eggs, Poultry, Meat, Fish;" next month, "The People to Be Fed."

runners of these diseases of metabolism. If attended to in time, removing the cause may be all that is necessary for cure or prevention of the disease. Fothergill says that the protection of digestion has saved many lives. Imperfect elimination of waste causes poisonous alkaloids to be formed; malfermentation produces gases which cause the stomach to be distended; this may interfere with muscular activity; or inflammation may be caused by coarse particles of food; headache or other discomforts result, warning the individual of his indiscretion.

Constipation may be due to lack of peristalsis, intestinal obstruction, too highly concentrated or too nutritious food, insufficient food, insufficient fluid, astringent food, irregularity in diet, lack of exercise or incomplete oxidation. This may be overcome by correcting the fault by eating an abundance of coarse foods in order to furnish the bulk necessary to stimulate peristalsis, by drinking plenty of water, especially when the stomach is empty, so that all particles of waste tissue or other matter which would interfere with the flow of the secretions may be washed out. Drinking water before breakfast is of no more value than drinking it at any other time if not taken long enough before food is taken to allow this flushing-out process to be completed. Fruits are very beneficial in constipation, as the acids stimulate the flow of the secretions, and the cellulose furnishes the necessary bulk, particularly if the skins are eaten. After a prolonged existence of any of these conditions, some one of the above mentioned diseases may develop.

Medical men are discarding the use of drugs and depending more and more upon diet in the treatment of these and many other diseases.

Dietetic treatment cannot be given mechanically. A diet list may be made up which includes every food desirable for a given disease and none that is undesirable, but there may not be one case in five where this list could be used without variation. For successful treatment there must be close cooperation between the dietitian and the medical man.

The doctor, knowing the condition of the patient and following his symptoms from day to day, can suggest changes in diet as necessary; but as a rule the medical man has no time to go into the detail of food composition, the effect of heat on food materials, and chemical changes which take place in some foods during cooking, as the well-trained dietitian of today has been able to do. All of these are important factors in the digestibility and assimilability of our food and should be given consideration in prescribing a diet. Then, too, the personal element must be taken into account. Many times a food that would be given to a young person would not be acceptable to an elderly one; the physical condition, previous environment and habits, personal idiosyncrasies, and probably complication of other diseases than the specific one being treated, may modify the diet to a greater or less extent. Patients who will submit willingly to the care or physical treatment—no matter how painful or disagreeable—which their physician tells them is necessary, will positively refuse to eat food of which they are not fond, or which is prepared in a way they do not like. In so far as is possible a patient should be given the things he enjoys; if the dietitian knows his likes and dislikes she may be able to give them consideration in the majority of instances; but when it is not possible to do so, the doctor can do more than anyone else to reconcile him to the diet. *Very few* kitchens are adequately equipped and provided with enough people to give good service to the entire house and take care of many special diets and special orders. Doctors who are not familiar with the situation have been known to ask for so many extra things that it would be impossible to provide them; many times a satisfactory substitute could well be given with no inconvenience to anyone. If there are twenty-five or thirty patients getting special diets in various parts of the house, representing a half dozen different men's ideas of treatment, with, perhaps, as many more patients having special things ordered for them, and almost an equal number of things brought to the patient by friends and sent to the kitchen for preparation and serving, great inroads are made on the time of the kitchen help; and there must be a way of regulating this.

In the hospitals with which I have been most intimately acquainted, the cooperation between the medical department and the commissary department has been such that we have been able to accomplish much that was of interest with the patients who were being treated dietetically, as well as to obtain most satisfactory results.

In order that we might have some sort of a guide at Lakeside for the nurses in the diet kitchen who prepare the food for the special diets, and for the nurses who do the serving in the wards, I have prepared a set of diets for several of the most common diseases. Dr. Christy, who has charge of the medical service in the wards, and Dr. Ledbetter, who has charge of the surgical service, approved the lists before they were put into service. At my request, Dr. Christy furnished the concise but comprehensive statements which add very greatly to the helpfulness of these lists.

LENHARTZ DIET.

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
*Eggs	2	3	4	5	6	7	8	8	8	8	8	8	8	8
Sugar	gm.	20	20	30	30	40	40	50	50	50	50	50	50	50
*Milk	200cc	300	400	500	600	700	800	900	1000	1000	1000	1000	1000	1000
Raw beef (chopped)	.....	....	....	gm.	35	70	70	70	70	70	70	70	70	70
Milk and rice	.....	....	....	....	gm.	100	100	200	300	300	300	300	300	300
Zwieback or crackers	.....	....	....	....	....	....	....	1	2	2	3	3	4	5
Raw ham (chopped)	.....	....	....	....	....	....	....	....	gm.	50	50	50	50	50
Butter	.....	....	....	....	....	....	....	....	....	20	40	40	40	40
Calories	200	420	637	777	955	1135	1588	1721	2138	2478	2941	2941	2941	2941

*Serve milk and eggs as egg-nog; set glass in bowl of ice; to be sipped by spoonfuls.

For gastric and duodenal ulcers we use the regular Lenhartz diet with no variation, and only the addition of the explanatory note, and the number of calories obtained from the daily portion—diet list No. I.

When the patient is ready for a comparatively full diet we serve him from the list prepared for hyperacidity—diet list No. II. If the trouble should be low acidity, the low protein list is used—No. III.

For cardiac cases we use Dubois's milk diet, No. IV, and the cardiac diet, No. V.

The treatment of typhoid has been somewhat revolutionized in recent years by the use of a high calorie diet. This list was designed to give approximately 3,000 calories daily. If enough calories cannot be given by the intake of the plain food materials, lactose may be added to the milk to increase the number somewhat. Since the feedings must be given frequently, it is quite desirable to have a variety. This list not only does away with the monotony of broths and milk, but permits of the nourishing cream soups, custards, etc., being interchanged with the more refreshing ices, fruit juices, etc., which will induce the patient to eat more than he might otherwise do. Fresh pineapple juice has been found to be very valuable, not only in these cases of high temperature, but in anorexia, anemia, gastritis, and on convalescent diet—diet list VI.

The treatment of diabetes is almost entirely dietetic, but it must necessarily vary with the individual. This disease is increasing in frequency, though it is almost invariably due to overindulgence in some form—overeating, overdrinking, or it may be overwork. As diabetes is a wasting disease, it is important to maintain nutrition and prevent emaciation, as well as to treat for glycosuria. On the other hand, a diabetic patient generally has a craving for food much of the time, and if he is allowed to do so he may overeat, and other evils may be brought on. Bulky foods, such as soups, salads with oil, green vegetables with high percentage of cellulose may relieve this craving and offset the effect of the more concentrated foods, such as meat, eggs, and cheese—diet list No. VII. This same diet may be used for obesity.

The lists for: Nephritis, VIII; Purin Free, IX; High Iron Content, X; and Benzidine-free, XI, are self-explanatory.

No special diet for tuberculosis is advisable, the point to observe being always to furnish a nourishing diet that will not overtax the digestion. The patient can utilize fat in large quantities, as he is out-of-doors a great deal, even if he is not exercising very much. Milk and eggs are essential, of course, but the tendency to overdo them is rather strong. This is apt to give the patient a feeling of revulsion toward them after having consumed large quantities of them for any length of time. One quart daily is a liberal allowance of milk, and part of it may be served in cream soups, custards or other forms, as well as a beverage. Three eggs daily are plenty and as many as the majority of patients will take.

In addition to these diet lists, some of which are used in the surgical wards as well as in the medical, we have the surgical test breakfast, which is in general use—tea and bread.

The liquid diet, soft with care, and convalescent, are in use throughout the house as preliminaries to the full house diet.

Too great emphasis cannot be placed on the fact that no diet list should be followed implicitly; that preparation and cooking of food require skill, and that the methods employed affect the results to a very appreciable degree.

I.

DIET FOR GASTRIC ULCERS.

This diet is used primarily in gastric and duodenal ulcers, the idea being to give as little food as possible to the patient, but enough to keep up caloric value, and thereby to lessen irritation.

To be served at hours of 8, 11, 2, 5, 8.

From first to seventh day, inclusive, all eggs are beaten. From seventh to fourteenth day, inclusive, half are beaten and half cooked. Third week: Soft c care diet. Fourth week: Soft diet. Fifth week: House diet.

Absolute quiet for four weeks. Bowels not to be moved for first week, not often for three weeks; then small glycerine or warm water enema. Out of bed twenty-eighth day. Home sixth to tenth week.

II.

DIET FOR HYPERACIDITY (SALT POOR).

This diet, which is high in protein, is indicated in hyperacidity. HCL is used up entirely in protein digestion. It is salt poor because salt enhances production of HCL. To be used for gastro-enterotomy and duodenal ulcer when patient is put on house diet.

Roast meats, steak, bacon.
Eggs in any form.
Cereals; rice as a vegetable or cereal.
Legumes, green vegetables; salads, except those made of fresh fruits.
Breads, of coarse flour.
All fruits, except lemons, grape fruit, and gooseberries. Fruits given to patients in this condition are better if cooked.
Soups may be given sparingly—except tomato.
Desserts: Cream desserts, custard, gelatines, soft puddings.
Milk may be given between meals. No coffee or tea.
Olive oil may be taken in large quantities.

III.

DIET FOR SUBACIDITY (LOW PROTEIN, SALT HIGH).

This diet, as its name implies, is for low acidity in the stomach. Since protein digestion depends primarily on hydrochloric acid, and since this is low, it will be evident that protein will not be well cared for. Salt should be high, since it is a forerunner in the production of hydrochloric acid.

Bread, butter and sugar.
Cereal: Once daily.
Eggs or Fish: Once daily.
Noodles or macaroni.
Green soup.
Legumes, potato.
Fruit, dessert.
Coffee or tea.

IV.

DUBOIS'S MILK DIET.

This diet is used primarily in the cardiac cases where there is extreme decomposition. The idea is to limit fluid intake and preclude solid food from an already overcongested and inactive intestinal tract.

	A. M.			P. M.				
Day	7	9	11	1	3	5	7	9
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.
1	3	3	3	3	3	3	3	3
2	4½	4½	4½	4½	4½	4½	4½	4½
3	6	6	6	6	6	6	6	6
4	9	9	9	9	9	9	9	9
5	12	6	6	9	6	6	9	6
6	12	6	6	9	6	6	9	6
7	Light diet c milk in afternoon.							

On fifth day: Brown bread added to diet, with honey or butter. G. A. M. lime juice, 2 ounces in water; 4 ounces if ordered. No other fluid unless ordered.

V.

CARDIAC DIET.

This diet is designed to meet the needs of chronic heart cases, because of low fluid content and the fact that it is an easily assimilable diet. Since we have great congestion of the alimentary tract, digestion proceeds slowly. It is also a diet of food materials which will not readily ferment. Fermentation and distention are contraindicated because of the added embarrassment to the heart action and circulation.

Water: In limited amounts. To be specified by the ward man.
Ice: In small quantities in severe cases.
Milk: T. I. D., 8 ounces—sipped slowly with meals.
Vegetables: All green vegetables. Cereals and starchy vegetables are restricted. No fermenting vegetables, such as those of the cabbage family, or legumes.
Bread: In small amounts.
Meats: Roast beef, steak, lamb, chicken, fish. No internal meats, such as liver, sweetbreads, heart, etc. No raw, smoked, cured or rare meats.
No eggs.
Fats: Butter, cream, olive oil, mayonnaise.
Desserts: Junket, custards, jellies, ices, sherbets, stewed fruits, oranges, grapefruit.

VI.

HIGH CALORIE TYPHOID DIET.

As the name implies, this gives as great a number of calories of food as possible to a typhoid patient, and takes away the undesirable feature of a solid diet which would enhance perforation and irritation to an ulcerated and inflamed bowel.

Milk: Hot or cold; modified with lime water, soda water, Apollinaris or Vichy; or in the form of kumyss, buttermilk, whey, junket or peptonized milk.
Tea or coffee.
Soups: Cream soups, or purees with all vegetables strained; clear soups; broths; oyster stew, with oysters removed.
Gruels: Of any cereal not containing very high percentage of cellulose, and always strained through fine strainer.
Albumin drinks: Water, plain or flavored with fruit juices; milk, plain or flavored with fruit juices.
Ice cream, or ices, without solid particles of fruit or nuts.
Eggs: Soft-cooked, raw, or in the form of egg-nog or custard.
Meat: Finely minced chicken or beef, or scraped beef.
Crackers soaked in milk or broth.
Soft puddings, gelatine, apple sauce, strained.

VII.

DIABETIC DIET.

Carbohydrate food may be given to chronic cases in small amounts at instigation of ward man. This diet is so-called carbohydrate-free. For in diabetes the patient is unable to assimilate carbohydrate food at all or in any but small amounts, and consequently any taken above his tolerance will immediately pass into his blood, causing high sugar content, and the kidney will be unable to hold it back longer and it will filter through into the urine, giving rise to the condition we know as glycosuria, the chief manifestation of diabetes.

Soups: All stock soups and bouillons.
Meats: Meats, poultry, and fish of all kinds not prepared with flour.
Eggs in any form.

Vegetables: Asparagus, artichokes, cauliflower, cabbage, brussels sprouts, sauerkraut, onions, young green beans, tomato, celery, lettuce, chicory, watercress, endive, spinach, pickles, olives, mushrooms, eggplant, Swiss chard, either leaves or stalks.

Gooseberries, rhubarb, grapefruit.

Nuts of all kinds except chestnuts.

Breads: Bran bread.

Desserts: Gelatine sweetened with saccharine and flavored with coffee, cream, nuts, sherry, brandy. Custards made of cream and sweetened with saccharine.

Clotted cream. Ice cream.

Cheese: All kinds used abundantly.

Beverages: Tea, coffee, lemonade sweetened with saccharine.

Fats: Should be used plentifully in cooking; salad dressings, cream.

VIII.

NEPHRITIC DIET.

This diet is low in most extractives, since these substances are high in purin bodies, which are eliminated poorly by the kidneys. It is also low in salt, since salt is eliminated poorly and the edemia of nephritis is largely dependent on the high salt content in the tissues from the fact that a diseased kidney eliminates salt poorly. The fruit acids, being also undesirable to inflammed kidneys, are either left out if they contain high amounts of the acids, or the fruit is cooked, which, in a measure, overcomes that undesirable feature.

Milk in any form, and foods made from milk—in limited quantity; buttermilk; kumyss; whey; junket; peptonized milk; cream; cocoa.

Cream soups of all kinds, except cream of beans and cream of peas.

Fruits of all kinds, stewed, except lemons and grapefruit.

Vegetables: Potatoes, squash, carrots, beets, cabbage, cauliflower, brussels sprouts, lettuce, celery, artichokes, tomatoes, spinach, sauerkraut, asparagus, onions.

Fats of all kinds: Butter; cream; olive oil (in salad dressing).

Sugar in abundance.

White bread and cereals in moderate amounts; toast; zwieback; crackers.

IX.

PURIN-FREE DIET.

This is given to gouty patients because the purins are the forerunners of uric acid, and since the disease is a deposit of sodium urate or a salt of uric acid in the tendons and joints, it will be evident that two things should be low in this diet: anything that favors uric acid formation, and any excess of salt (sodium chloride), since sodium urate is a combination of uric acid and salt. Purins should be low because they are precursors of uric acid.

ALLOWED.

White bread and crackers.

Rice, potato, macaroni.

Apples, grapes, dates, figs, raisins, honey, nuts, oils, all forms of fat.

Milk and cheese in moderate amounts; eggs.

PROHIBITED.

Rich meats, soups, sauces, and gravies; game; salt fish; salted or cured meats; sausage; lobster; all foods highly seasoned or pickled.

Rich pastries; freshly made breads.

Tomato, cucumbers, mushrooms, rhubarb, asparagus, legumes.

Tea or coffee; alcohol in any form.

This diet is suitable for exophthalmic goiter, with the addition of chicken—salt being added and acids avoided.

X.

DIET CONTAINING HIGH IRON CONTENT.

This diet is indicated in secondary anemia and chlorosis, where the iron content of the tissues is low and consequently there is a low hemoglobin estimation in blood.

Liver, beef steak, roast beef.

Eggs.

Oatmeal; cereals made from wheat.

Bread: White, rye, whole wheat, graham, bran.

Beans: All kinds; peas.

Peanuts, almonds, walnuts, spinach, prunes, raisins, dates, figs, apples.

The following contain .001 percent of iron.

Lettuce, celery, corn, corn meal, cabbage, asparagus, potato, honey, grapes, cocoa.

XI.

BENZIDINE-FREE DIET.

Milk, crackers, and rice.

This is an iron-free diet. The idea is to free the alimentary tract of any added iron and then test the stool for iron. If there be iron present we know that since we have not given any in the food it must come from one source—the hemoglobin of the blood. It is taken as a positive test for bleeding into the intestinal tract, and evidence of an ulcer. Patients should be watched to be sure that they eat nothing but those things listed.

XII.

LIQUID DIET.

Milk: Sweet, modified with lime water or barley water, or in the form of buttermilk, whey or junket.

Broths; gruels, strained; beef juice; beef tea.

Cocoa (hot or iced); tea (hot or iced); coffee.

Fruit beverages: Lemonade, orangeade, grape juice.

Barley water or rice water.

Albumin drinks: Milk, water.

Cream soups.

Egg-nog.

Frozen creams, or ices.

Include one quart milk and three eggs daily. To be given in eight feedings.

XIII.

SOFT C CARE.

In addition to "Liquid Diet."

Dry or milk toast.

Eggs, soft boiled or poached.

Custards, gelatins.

Apple sauce; prunes, strained.

Cereals; arrowroot, tapioca or rice, in the form of cereal or dessert.

Six servings daily.

Never serve cereal and eggs at the same meal.

CONVALESCENT DIET.

In addition to "Soft c Care."

Grapefruit. (All fruits to be strained, and all vegetables strained or mashed, when advisable.)

Fish, chicken, steak, lamb chops, scraped meat balls, scraped meat sandwiches.

THE HOSPITAL HOME EXPERIMENT WITH TUBERCULOUS FAMILIES.[1]

Results of an Attempt in New York City to Provide Ideal Home Conditions for Families One or More of Whose Members Had Tuberculosis.

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IN 1912 in New York City there were 10,000 deaths from tuberculosis. During that same year there were reported to the Department of Health 22,000 new cases of this disease. In every single year in New York City there are known to be at least 60,000 people marked for death from this cause alone. It presents, evidently, an imperative problem.

In dark, dirty, unventilated, overcrowded rooms exists many a family, usually with numerous children, of which family one or both parents have consumption. Frequently several of the children also are tuberculous and all are inevitably predisposed to the disease. Not infrequently the consumptive mother is nursing an ill-fated babe. In the sputum-poisoned, germ-charged atmosphere, incipient tuberculosis is developing, unrecognized and unchecked. The infected, absolutely unsegregated in this close-knit family life, and opposed to separation from their loved ones, constitute a deadly menace to their family and neighbors.

Fig. 1. "Sunny Jim," 4½ pounds under normal, and his mother, before admission.

Fig. 2. "Sunny Jim" one month after admission.

The home itself is in disorder, the family in partial or utter dependency. Formerly self-respecting and independent, they have now lost the hope and often the capacity for self-support. Standards of living and of morals have either deteriorated or utterly vanished. This description is literally true of hundreds of families among the tenement poor in New York City.

To relieve these conditions various agencies are at work. Among these, and attaining a valuable measure of success, are the *dispensary* with its clinic and visiting nurses; the *preventorium* for the treatment of children over four years of age and predisposed to tuberculosis; the *sanatorium* for the cure of incipient patients; and the *hospital* for the segregation and care of advanced cases. These agencies, excepting in part the dispensary, treat the patient apart from his home, are concerned with the individual rather than with the family as a unit, and deal almost entirely with the physical rather than with the social and economic needs.

But tuberculosis is not merely a human disease. It is a social disorder, and the real problem is not alone the patient, but the family and the conditions under which they live. As these were basic in causing the disease, so their correction is vital to the permanent cure of the patient and to the eventual welfare of his family. To treat the social ills, therefore, is quite as important as to cure the disease, for without social rehabilitation the disease is most liable to recur in the patient and to continue in his family.

Based upon such convictions as these the Home Hospital experiment was established by our Association on March 19, 1912, for the combined treatment of tuberculosis and poverty among the tenement poor of New York City. More specifically, the object sought is to demonstrate that if sanitary housing with ample sunshine and fresh air, adequate income, including good and abundant nourishment, freedom from undue work and worry, reasonable segregation, skilful medical care, and constant nursing supervision be provided, it is possible:

1. To prevent the spread of tuberculosis from

[1]Paper read by Donald B. Armstrong, M. D., Director Department of Social Welfare, New York Association for Improving the Condition of the Poor, at the Southern Conference on Tuberculosis at Atlanta, on November 30.

the sick to the well members of the family and particularly to protect the children from infection;

2. To cure any of the family who are in the early stages of the disease;

3. To secure improved health and larger earning capacity to patients whose cases are moderately advanced; and,

4. To complete, at least in instances, the rehabilitation of the family, physically, economically, and socially.

Fig. 3. "Sunny Jim" one year after admission; weight 23½ pounds.

The Home Hospital, ideally located at 78th Street and John Jay Park, occupies two entire sections of the East River Homes. One section was opened March 19, 1912, when the experiment was established; the second one was leased last year and was occupied on November 24. Two open staircases lead to the forty-eight apartments, consisting of from two to four rooms each, including one or more bed-chambers with open-air sleeping balconies. From a sanitary standpoint these apartments far excel the most exclusive apartments in New York City. No expense has been spared to provide a maximum amount of sunlight and ventilation for each room. Even the windows, extending from ceiling to floor, are arranged in three sashes, so that when open two-thirds of the space is unobstructed. On the roof is a spacious solarium, with hedges of privet and geraniums. A part of this solarium is reserved for the patients. Here, in reclining chairs, they take the cure. Another part of the roof is a children's playground, where there is no premium on fresh air and sunshine. There they play and make merry, remote from the danger of infection. Still another part of the roof is occupied by a fresh-air school.

In selecting families to participate in this experiment, preference has been given: 1st, to families in which both poverty and tuberculosis are more or less incipient; 2nd, to families believed to possess sufficient intelligence to cooperate in the experiment; 3rd, to families in which dependency is due to tuberculosis of the wage-earner; and 4th, to families in which tuberculosis of the mother renders it inadvisable to keep the home together under ordinary circumstances; in general, to poor families made or kept dependent by tuberculosis and in which the disease is not more than moderately advanced. Most of the families were already under the relief care of the Association and selection is made without regard to nationality or religion.

It is to be noted that treatment is provided in this way for children too young to be admitted to preventoria, for patients unwilling or unable to leave their families, and especially for the largest and, because of its irresponsibility, most dangerous, class of sufferers,—namely, the more or less chronic second-stage, and able-to-be-about cases, almost entirely unprovided for by other institutions.

The actual selection of families is made in the following manner: A relief visitor of the Association visits and carefully investigates the home conditions, and if she decides that the family is suitable, all members report to the Home Hospital clinic for examination. If the case is one which gives fair promise of being cured in a reasonable length of time, or even of such improvement as to restore partial earning capacity of the patient, the family is admitted. It will readily be seen by examining the cases in the appendix of the Home Hospital report that the selection of patients has not been confined to favorable early-stage cases.

As its name implies, one of the purposes of the hospital is to preserve the home. Therefore, so far as possible, each family is permitted and helped to live a normal home life. The medical régime adopted is that of the best sanatoria and hospitals, including regular physical examinations, weekly sputum tests, adequate segregation of the more advanced cases, open windows and outdoor life upon balcony, the roof, or in the park nearby, absolute rest for those who need it, and a graduated amount of exercise for appropriate cases, and constant medical oversight, nursing care, and home inspection.

The patients, encouraged to work on tasks proportioned to their increasing strength, are thus prepared for a return to normal activity and to complete resumption of family responsibility. When the family is about to be discharged, the securing of employment and a sanitary home completes the care provided.

To each family on admission is given careful and oft-repeated instruction in precautions necessary to prevent the spread of consumption to the

well members. Individual toilet articles are given to each member of the family and all necessary furniture, clothing and household supplies are provided. Countless minor details in respect to prophylaxis and sanitation of the home are carefully explained, and particular emphasis is laid on the value of fresh air and personal hygiene as preventives not only of tuberculosis but also of other diseases.

To care for the patients and to supervise and educate both the sick and the well members of the families, the Association has a staff of fourteen

Fig. 4. In the clinic. Physician examining child of a patient.

persons at the hospital. This consists of a superintendent, a medical director, an attending physician, two nurses, a nurses' helper, a mothers' helper, two clerks, a cook, and four cleaners.

All positive and suspected cases are examined every six weeks, healthy children every three months, and healthy adults every six months. The results of each examination are recorded on a separate chart. After each examination the patient is advised as to his condition, and is given instructions accordingly. If the patient has active symptoms, with cough, sputum, elevation of pulse and temperature, etc., he is ordered to remain in bed. He sleeps out of doors on the balcony, is carefully fed, and isolated as far as possible from the well members of the family. The children are not allowed in the patient's bed-chamber or in close contact with him. The family is encouraged to spend the day on the roof, and to return to the apartments only to eat and sleep.

With improvement, the patient spends the day on the roof, reclining in a steamer chair. Extra nourishment is given him at 10 a. m., at 3 p. m., and just before retiring. Arrested cases are at first allowed to do light work for a few hours each day, care being taken that the temperature, pulse, weight, and physical signs and symptoms remain satisfactory.

A daily morning and afternoon temperature and pulse record is kept of all positive and suspected cases. Each week sputum examinations are made and weights are recorded. Each patient is provided with a notebook, in which answers to the following questions are entered daily:

How many hours sleep?
How many sections window open at night?
Head or feet to open window?
Amount cough, sweat, or expectoration (during both day and night)?
Hour of arising?
Morning tub?
Cold water to chest?
Breakfast menu?
Morning temperature?
Hour started for roof?
Dinner menu?
Hour returning from the roof?
Nourishment at 10 a. m.?
Temperature at 3 p. m.?
Supper menu?
Nourishment at 9 p. m.?
Hour of retiring?
Amount of exercise or work during day?
Amount of sleep during day?
Chills, day or night?
Total hours spent in the open during day?
Total amount of milk and eggs during day?
Condition of bowels?
Gain or loss in weight each weighing day?
Amount of earnings, if any?
General remarks?

Fig. 5. Tuberculosis precautions: Instructing a mother in care of food and sterilization of dishes after meals.

The records, besides being extremely interesting, keep always before the patient the essentials of the cure, and there has gradually developed a friendly rivalry among the patients, for each desires to excel in improvement. The hygienic-dietetic form of treatment has been followed. No special drugs have been employed. Tuberculin was administered in suitable cases during the second year of the experiment.

The attending physician visits and holds clinics at the hospital on Monday, Wednesday, Friday and Saturday of each week. One evening each month he meets all the patients in class confer-

ence. These gatherings are informal, the patients being encouraged to discuss their condition and ask questions.

At the same time that the patients are being treated for tuberculosis, the other members of the family are treated for any physical defects they may have. They are also taught how to live properly and how to preserve their health. To the mothers, instruction is given regularly in cooking, sewing, nursing, care and feeding of infants, personal cleanliness, hygiene and sanitation. The children attend regularly a fresh-air school on the roof.

What have been the medical results of this experiment? During the first year eleven families

Fig. 6. Caring for the baby; nurse teaching a mother.

were discharged, six having been rehabilitated physically, socially and economically. The other five were dismissed for intemperance or refusal to cooperate. During the past year fourteen families were discharged, eleven having been restored to health and earning capacity. Three refused to follow advice and were dismissed.

Since the beginning of the experiment, of a total of thirty-six positive patients and ten suspects discharged during the two years only two cases have relapsed. It is most gratifying to visit the homes of these discharged families and to find sanitary and prophylactic measures observed. The children continue to gain in health and strength and the mothers frequently express their gratitude for all the good and happiness the Home Hospital has brought them.

In no instance has a well member of a family developed symptoms of tuberculosis, either while at the Home Hospital or since discharge. This is convincing proof that, although the adult patient remains at home, there is little danger of infecting others if prophylactic measures are maintained. It also indicates that the degree of tuberculosis in any community, like the incidence of typhoid fever, is a fair index of that community's hygienic status. Teach people to live properly and tuberculosis will rapidly wane.

Inasmuch as some of the adult patients are of a somewhat different type from those treated at sanatoria, it has seemed wise to classify them under the following groups:

Group A. Cases with definite physical signs of pulmonary tuberculosis and with tubercle bacilli in their sputa.

Group B. Cases with definite physical signs of pulmonary tuberculosis, but without tubercle bacilli in their sputa.

Group C. Inactive cases with evidence of slight healed lesions.

Group D. Cases which have been in the hospital insufficient time to have their disease arrested.

During the two years the hospital has cared for 62 families, including 315 individuals, classified diagnostically as follows:

136 positive cases.
71 suspects.
108 non-patients.

The results for the adult groups for those cases with positive signs are as indicated by the following figures:

Total cases	50
Apparently cured	21
Arrested	16
Improved	8
Not improved	4
Died	1

This record, I believe, compares very favorably with that of the other tuberculosis sanatoria, especially in the second-stage cases. There were 31 such cases, 13 of which were apparently cured. Of the 15 first-stage cases, 8 were cured.

Fig. 7. Von Pirquet test for tuberculosis.

Not a single patient who has followed advice has failed to improve.

In no instance has a well member of a family developed symptoms of tuberculosis while a resident at the Home Hospital. This is highly presumptive evidence that with proper supervision of patients under hygienic surroundings there is little danger of infecting others.

The greatest good obtained is not the mere restoration of the adult member of the family to health and earning capacity. He has the disease and perchance may some day succumb to it, for it is well recognized that tuberculosis is a chronic relapsing disease. It is the children who are of vital importance.

Today's anemic child of the tenement is the coughing, germ-spreading adult of tomorrow. Left unrescued in its inimical environment, it may never reach maturity. The children from 3 to 14 years of age have, therefore, claimed our special attention. Upon admission over 75 per cent were under-developed, pale misfits—excellent candidates for the so-called latent or pre-tubercular class. During their residence at the hospital they are practically isolated from the infected adults and are given every hygienic advantage. They are well fed, receiving extra nourishment twice daily. They spend the entire day in the fresh air, and at night sleep in rooms with the windows wide open. The children of school age attend the open-air school on an adjoining roof.

Realizing the great difficulty of diagnosing tuberculosis in children, and also the difference of opinions of pediatricians as to what syndrome constitutes active pulmonary tuberculosis, we have adopted the expedient of classifying our suspected children under two groups:

Group A: Those under twelve years of age who present the following symptoms:

1. Under weight for age.
2. Constant or frequent cough.
3. Occasional or constant temperature of undiscoverable origin.
4. Rales (near one or both nipples, constant or inconstant), interscapular dullness.
5. Positive von Pirquet reaction (under 4 years).

Group B: Those who are delicate and present some of the above symptoms and physical signs.

According to this classification we find 60 patients and 67 suspects among the 189 infants and children under care. In other words, 31.7 per cent of the children of tubercular parentage already have thoracic tuberculosis, and another 34.4 percent are excellent candidates for the disease. It is probable that a similar appalling percentage holds true in thousands of tenement children.

The results obtained with the children have been so gratifying that we believe the experiment would be well worth while even had the adult cases shown no improvement.

A study of the weight charts of the positive and suspect children is most interesting. When admitted most of the children are under weight and under-developed. At the end of six months of treatment at the Home Hospital their gain in weight, according to their respective ages, not only equals that of the normal healthy children in the hospital, but in most cases is considerably in excess.

Interesting also is a comparative study of the gain in weight according to age of healthy normal outside children and of those at the Home Hospital for a period of six months. It was noted that the under-developed children have made a gain not only comparable to but considerably in excess of that of healthy children so that at the end of six months many have reached a weight normal for their age.

Fig. 8. The open-air school on the roof of the Home Hospital.

The improvement of the infants (1 to 3 years) quite rivaled that of the children. The babies are placed in cribs on the roof, where during the summer there is always a cool breeze. Careful formula feeding, good nursing, "patience and hope," have had their reward. Each week has brought results.

The average gain in weight for the infant patients has been 3.78 pounds in 180 days average residence, and the suspect infants have gained an average of 3.4 pounds in a similar time.

One marasmic infant, Kathleen C., weighed six pounds and fifteen ounces at nine months. Her

normal weight at this age should have been 17.5 pounds. The baby had been at a good city hospital and the mother was told it could not live. Shortly after admission to the Home Hospital the infant gained one pound and seven ounces in one week and has continued to gain at the rate of nine and three-quarter ounces a week.

The excellent results obtained with the infants and children indicate, we believe, the real value of the experiment. These children of today are the adults of tomorrow. Left unrescued in their tenement environment, many would have succumbed to the disease or would have reached maturity as weaklings, their health undermined with tuberculosis and themselves a menace and burden to society, as their parents are now.

Briefly, what can be said regarding the effect of the Home Hospital treatment upon the earning power of the family? Let us take the families discharged in the last year, and we see that whereas their average weekly income on admission was $6.34, on discharge it had increased to $11.17.

Taking the 39 families still under care at the end of the last year, we find that their average weekly incomes have increased from $3.37 to nearly $6.00.

Thus by restoring to health wage-earners and other members of dependent families and by teaching each to live properly and to manage a home efficiently, the Home Hospital has increased not only the earning powers of those admitted, but also has raised the standard of living in each home. The social and economic results during the two years of the experiment strengthen our belief that completely to rehabilitate families either made dependent by tuberculosis, or whose physical breakdown has resulted from destitution, the treatment of the physical and social ills must be combined.

What has the method cost and how does it compare with the usual hospital or sanatorial treatment? The cost of treatment, including living expenses, cost of medicine, supervision, and administration, is indicated by the following figures from the Home Hospital report:

The daily cost per family was $3.32; per individual, 65 cents; per patient, 66 cents; per nonpatient, 63 cents.

This cost per patient of 66 cents compares very favorably with the average per capita cost of 17 New York State tuberculosis institutions giving individual treatment, the figure for which is $1.40 or over twice the Home Hospital figure.

To this difference must be added the many unique advantages of the Home Hospital method, such as: (1) the directness of its attack upon the home conditions as a crucial, underlying cause of tuberculosis and its consequent poverty; (2) the readiness with which unsuspected, incipient cases may be detected and checked; (3) the exceptional opportunity it affords for adequate control of the disease and family; (4) its avoidance of the opposition, deterrent influence of worry and other hardships inevitably occasioned by the separation of the sick from the well members of the family; (5) its preservation of the integrity of the home; (6) its care of classes of patients who either could not or would not go to institutions; (7) its fostering an increase of earning capacity in the wage-earner and a gradual return to normal conditions; (8) its provision against a return of either the patient or family to the inimical environment where the disease was contracted and is likely to recur; and (9) its care not only for the physical, but for the economic and social ills not merely of the patient but of the entire family.

Such a work aims at causes, seeks not only the cure of the individual, but the protection of society, is concerned with the patient, his family and environment and deals with fundamental questions of ideals, of livelihood, and of life.

Red Cross Discourages Decorations.

Through the State Department, Maj.-Gen. George W. Davis, U. S. A., retired, chairman of the Central Committee of the American Red Cross, has addressed a letter to the American ambassadors to the European countries at war, in which the bestowing of valuable presents or decorations upon individuals representing the American Red Cross by foreign sovereigns or officers of foreign Red Cross societies, is discouraged. This letter was prompted by the fact that on former occasions beneficiaries of the aid of American Red Cross surgeons and nurses and other representatives have awarded medals and other decorations.

"While we have no intimation that similar action may be taken by the government of the country to which you are accredited or by the Red Cross of that country," says the letter, "I am writing in the hope that should you learn of any such proposal you will kindly let it be known as coming from the Central Committee of the American Red Cross that they hope that no present, decoration, or testimonial will be offered to any individual connected with our Red Cross.

"Our organization is an impersonal one, and our efforts are always prompted by motives of sympathy for all who suffer, irrespective of nationality or creed. The individuals composing the organization, and its officers, are simply the agents of the National Society into which their personality is merged. Such assistance as may be rendered is accomplished by means of the contributions of the American people."

Two persons were badly burned and about $4,000 worth of drug supplies were consumed when a forty-eight-gallon barrel of alcohol exploded at the Memphis (Tenn.) City Hospital recently. The explosion occurred when a negro porter drove a steel spigot into the barrel. It is supposed that the spigot was driven against a metal hoop, causing a spark of fire, and this ignited the alcohol.

Fig. 6. Four gasoline and two horse ambulances used by Flower Hospital.

SYSTEMATIC AMBULANCE SERVICE FOR METROPOLITAN HOSPITALS.

New York's Experience Demonstrates That Electrics, Gasoline Cars, and Horses Have Definite Use—Figures of Cost Differ Widely and Are Not Complete—Some Comparisons.

By NORMAN MAUL, New York.

[Concluded from January number.]

NEW YORK Hospital was the second to begin the operation of an emergency service, the vehicles being installed in 1877. Today this hospital maintains seven autoambulances, and the space that was once occupied as a stable is now the living quarters of the corps of ambulance drivers. The New York fleet is all electric, the first machine having been installed in 1905. This is a one-ton vehicle, and, although it is not now on "first call," it has some interesting records. At the disastrous Triangle shirt factory fire it carried, on one trip, eight patients to the hospital, a distance of about half a mile, and on another occasion it made a fifty-mile trip to a hospital beyond the city limits. The trip was made on a stormy day, and in places the mud was hub deep. Only an hour's boost of the batteries was necessary to get the car home.

The House of Relief is the down-town branch of the New York Hospital. This institution uses one electric car and two horse ambulances. In 1912 New York Hospital responded to 6,971 calls and the House of Relief to 5,251. As in the case of Bellevue, no close record was kept of the operating costs of these ambulances. That there were, however, evident economies is shown in the report of Dr. Thomas Howell, the superintendent, in which he stated: "We find the electric vehicles much more satisfactory than the horse-drawn ones, especially in hot weather. During one hot day nearly ninety calls were answered between the two stations, and an electric ambulance responded to thirty calls in twenty-four hours." It was such experience as this that led the New York Hospital to keep adding to its fleet, the latest installation being two machines, which began work last fall.

POLYCLINIC'S COSTLY SERVICE.

In sharp contrast with the incomplete operating records of Bellevue and New York hospitals are those of the Polyclinic, which inaugurated its ambulance service in October, 1912. Polyclinic operates in an up-town district, extending from Forty-second street to Ninety-sixth street, and from Central Park west and Eighth avenue to the North River, making a territory of about three square miles. To cover this the hospital uses three high-power gasoline cars. One has a speed of fifty-five miles an hour, the other two are capable of forty-eight miles. The three cost $8,000 in May, 1912, and five months later they were placed on emergency call. During the first year of their operation they responded to 4,711 calls, and their operation cost $17,459.82. This sum includes a

matter of more than $1,000 for liability insurance, almost $2,900 for repairs, about $4,300 for salary and board for the three chauffeurs, and about $900 for gasoline, oil, and sundries. It does not include depreciation, which, based on their one year's experience, the hospital officials think should be something like 30 percent.

THE OLDEST AUTOAMBULANCE.

While not operating on emergency service, the ambulance of Mt. Sinai Hospital is interesting chiefly because of its age. It was presented to the hospital twelve years ago, costing the donor at that time $3,000. Used exclusively for the transfer of private patients, it averages about 300 calls a year. The annual cost of operation varies between $600 and $700 in years when no extensive repairs are made to between $1,600 and $1,800

Courtesy of the Edison Monthly.
Fig. 7. Dean of New York's motor ambulances—An electric that was installed by Mount Sinai Hospital in 1902.

when the ambulance is thoroughly overhauled and new batteries supplied.

THE NEED OF AUTOS.

The passing of the horse is quite pointedly shown in the following extract from the report of Dr. Willis G. Nealley, superintendent of Brooklyn Hospital:

"The ambulance service shows a decrease of 514 cases, there being only 2,505 in 1912 as compared with 3,019 in 1911. This decrease is to a great extent due to the installation of a motor ambulance service in one of the nearby hospitals, which has divided the ambulance service in this section of the city."

Brooklyn Hospital covers one of the busy sections of Brooklyn—the entire down-town shopping district, the approaches to two of the big East River bridges, and a large manufacturing district being in its territory. Until the present time, horses have been deemed quite sufficient, but the nearby auto, which took away 500 calls, was an unanswerable argument in favor of motors. Motors will be installed on the completion of the new building, which is now in course of construction. The operation of the two horse vehicles, which

Fig. 8. One of the three gasoline ambulances used in the hilly territory of the Knickerbocker Hospital.

answered 2,505 calls in 1912, cost $2,612.02, while for 2,678 calls in 1913 the cost was $2,450.63.

GASOLINE AND ELECTRIC AT LINCOLN.

Lincoln Hospital, which ministers to a large territory in the Bronx, operates two gasoline cars and an electric. The service runs about 250 calls a month. There were 2,047 calls in 1912, and for the hospital year ending September 30, 1913, this had increased to a total of more than 2,800 calls.

Fig. 9. Interior of the Knickerbocker Hospital ambulance.

First calls are taken by the gasoline cars, while the electric, which has been in service a good many years, is held in reserve. During the mid-February blizzard, however, this equipment, in common with most of the autoambulances in the city, was tied up by the snow, and, until conditions had been somewhat restored to the normal, Dr. Gwyer, the superintendent, rigged up a bor-

rowed sleigh and thus kept his emergency service in operation.

HORSES IN THE BLIZZARD.

In Brooklyn during the storm the only ambulance in three adjoining districts was the horse vehicle of the Methodist-Episcopal Hospital. This took calls in its own territory, the Norwegian Hos-

Fig. 10. One of the fleet of seven electrics used by New York Hospital.

pital district, and that of Holy Family Hospital. The Methodist-Episcopal electric was laid up, and the horse vehicle was converted from a single-horse rig to a two-horse outfit, an extra horse being hired for the work.

Under normal conditions the one electric handles three-quarters of all this hospital's calls, which total about 1,800 a year. The horse rig takes second calls, and is used at night, during the chauffeur's off duty. The electric was installed in November, 1911, and the only renewals at the present writing are the tires, which have been changed once, and about half the battery cells.

The expense of operating the electric and the horse rig during 1913 was only $1,556, a figure that is almost impossible of improvement in consideration of the service rendered. The auto gave all the speed that was needed, while the horse aided its faster companion in taking second calls and going on duty when snow tied up all types of motor vehicles.

GASOLINE AMBULANCES AT FLOWER HOSPITAL.

The big section of Manhattan between Forty-second and One-hundred-and-tenth streets and extending from Eighth avenue east to the East River, with the exception of a small territory in the northeast corner, is covered by Flower Hospital. This hospital operates a mixed service of gasoline and horse vehicles. There are four autos in active service, while two horse rigs are held in reserve. During 1912 there were 6,124 calls. This ambulance equipment, including the building, harness, tools, extra parts, etc., cost $23,000, while the annual cost of operation is about $8,000. This, according to Dr. Royal S. Copeland, is only an estimate, nor does it include interest on the investment or an allowance for depreciation.

THE KNICKERBOCKER EQUIPMENT.

The Knickerbocker Hospital, formerly the J. Hood Wright, serves the territory from Ninety-sixth street to One-hundred-and-forty-fifth street, between Eighth avenue and the Hudson River. Three high-power gasoline cars, installed in the summer of 1913, have displaced three horse ambulances and four animals. This hospital averages about 200 calls a month, which are equally divided among the three vehicles, as they rotate according to the off-duty days of their chauffeurs. In changing from horses to motors, two experienced auto drivers were hired, while one of the horse drivers qualified as a chauffeur and was retained. Geographically, the Knickerbocker district is one of the hardest in the city, for almost every north and south street is a heavy-graded hill.

RELIABLE DATA NOT AVAILABLE.

It is to be regretted that these various hospitals have not kept a closer record of the cost of operation of their emergency ambulances. Such data,

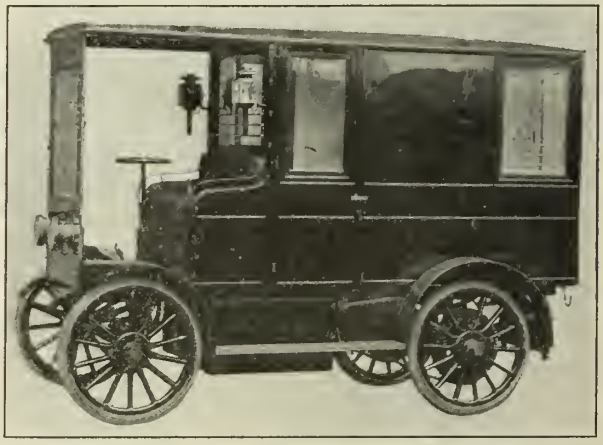

Fig. 11. Ambulance of Newton Hospital, Newton, Mass., in service two and a half years.

together with a report of the work done and the operating conditions, would be invaluable in guiding hospitals that have not yet invested in motor equipment.

The few figures presented are interesting chiefly because they show the extremes of such operating cost. Polyclinic's $17,000 expense might not be equaled by another hospital anywhere. The $1,500 low mark attained by the Methodist-Episcopal Hospital is about as low an operating cost as any hospital could expect. Yet, with these two instances left out of consideration, there are certain

broad general facts that are plainly evident. The first is that the gasoline car and the electric car are not rivals in ambulance work. Each has a field in which it is better; as for the horse, he is indispensable.

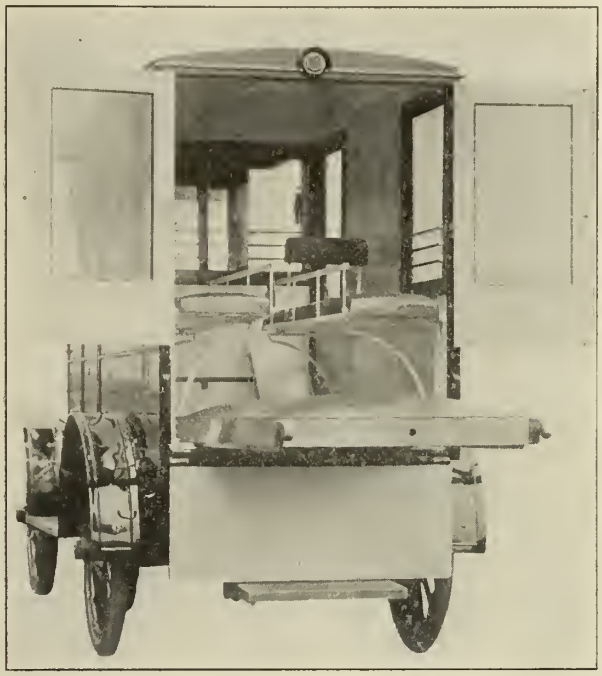

Fig. 12. Interior of ambulance of Newton Hospital, Newton, Mass.

The gasoline car is the fastest vehicle available. It is capable of long runs at a sustained speed of thirty to forty, even fifty, miles an hour. Of course such speed and endurance must be paid for. It is doubtful if the high cost of gasoline car operation justifies its use in the ordinary city district. For country hospitals and those operating in big

Fig. 13. White gasoline ambulance, Department of Health, New York City.

districts, where long runs and hilly roads are encountered, the gasoline car will render the most satisfactory service.

The electric car is not so fast, although with speeds varying from twelve to twenty-two miles an hour, it is quite sufficient for city operation. In a run of a mile, which is about the average in cities (New York at least), the difference between a fifteen-mile-an-hour and a fifty-mile-an-hour car is nil when traffic delays are considered. The electric is far cheaper to operate than the gas car, and, with the speed factor eliminated, it should be generally used for city work.

The horse, of course, is gradually being crowded out. In hot weather he works at a great disadvantage; on icy pavements in winter he is in constant danger of falling; the cost of feed is gradually becoming higher; yet, with the recollection of his service last February, who shall say that the horse has seen the end of his ambulance career?

DR. CRILE GOES TO EUROPEAN WAR.

Lakeside Hospital, Cleveland, Sends Famous Surgeon, with Corps of Assistants, to American Hospital, Paris.

A party of Cleveland (Ohio) physicians and nurses, headed by Dr. Geo. W. Crile, sailed December 30 to establish a surgical ward in the American Ambulance, in Paris. Dr. E. F. Kieger, Dr. Charles Stone, Dr. S. S. Ledbetter, Miss Agatha Hodgins, and Miss Iva Davidson were members of the party. The undertaking is being financed by the trustees of Lakeside Hospital. Dr. Crile is expected to remain in Paris several months, after which his place will be taken by Dr. William F. Lower, who is associated with him at Lakeside. The ward to be established will be known as the Lakeside ward.

KEEP FAMILIES TOGETHER.

Kansas Man Insists on State Paying Parents to Care for Children Rather Than Place Them in Institutions.

H. C. Bowman, a member of the Kansas State Board of Control, is in favor of the "mothers' pension" plan of providing for the welfare of dependent or neglected children as opposed to caring for them in state asylums. A recent report of the Kansas State Orphans' Home shows that it costs the state $4.65 a week for every child "fathered and mothered" at this institution. Mr. Bowman is of the opinion that it would be better to add to the resources of the natural parents of the children while they are getting on their feet and keep the family together, and he believes this could be done at an expense to the taxpayers that would be less than what it costs to operate the present system. Mr. Bowman has reached his conclusions with a full knowledge of the common objections to the pension plan.

The A. N. Brady Maternity Home, erected at Albany, New York, at a cost of $150,000, will soon be ready for occupancy. It is a five-story structure, thoroughly fireproof. The Albany *Evening Journal* is responsible for the statement that there is "not a stick of wood in the building." In the interior everything is of steel, finished circassian walnut. The floors are of cork preparation. On the entrance floor are the general office, the examination room, consulting rooms, resident physician's room, guests' rooms, nurses' dining room, and the general diet kitchen. On the second floor there is a ward with twelve beds, two wards with four beds each, two quiet rooms, diet kitchen, laboratory, etc. The third floor has ten private rooms, some with private baths. The fourth floor is the same as the third. On the fifth floor are the operating and sterilizing rooms. An electric elevator connects the floors. Glass enclosed verandas are built on three sides of the second, third and fourth floors. The home was made possible by a donation from the late Anthony N. Brady and his family.

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Contributors, subscribers, and readers will find important information on advertising page 34.

Examination of School Children.

One of the most notable contributions to the propaganda for the public health that has ever been made was that recently presented by the New York City department of health, in the form of a system of physical examinations of employees of the department.

It was the health commissioner's idea that if he could show some definite, advantageous results by such a system, inaugurated among the department's employees, it would prove an unanswerable argument in favor of the periodic examination of well people to keep them well.

The department's experiment had most interesting results; three hundred employees were taken for the first test, the commissioner, Dr. S. S. Goldwater, submitting himself as the first volunteer for examination. Here is a tabulation of the findings by the medical examiners:

Six errors of nutrition, based on decided variations from normal weight in proportion to height.

Seven decided defects of hearing, and one instance of suppurating otitis.

Six instances of uncorrected defects of vision.

Ten instances of marked disorders of digestion, chiefly such as affect sedentary workers.

Thirteen instances of defective teeth needing dental care.

Fifteen minor defects of the tonsils, throat and upper respiratory tract.

Twenty instances of appreciable defects of heart action, among which appeared five needing particular precautions in regard to their manner of living.

Fourteen instances of pulmonary defect, of which three were healed lesions resulting from previous tuberculosis, two were instances of early processes put under medical care, and the remainder were minor and temporary affections.

Two instances of anemia needing medical care.

Two cases of high blood pressure needing medical treatment or alteration in manner of living or personal habits, and associated therewith errors in kidney functions.

The following minor variations from normal were found, which did not appear to affect the health of the individual, namely:

Palpable spleen, three cases; palpable kidney, one case; enlarged thyroid, one case; subacute skin affection, one instance.

Alimentary glycosuria was found in one case, but on reexamination had disappeared.

A moderate albuminuria was found in a number of cases, but not to an extent to indicate pathological condition except in the two cases above referred to, which were associated with arterial hypertension.

One severe disorder of the nervous system was found, which should respond to appropriate medical treatment and be permanently relieved.

The insurance companies have, for a long time, advocated the periodic examination of policy holders, to insure early diagnosis and, if possible, prevention of approaching disease. Some of the industrial corporations have likewise been thinking about a similar service for their employees. Dr. Goldwater's experiment should act as a strong stimulus, and hasten the day when medical examinations of well people will be the rule and not the exception.

If adults, and especially people with intelligence and education enough, and the necessary training to be employed in the health department of a great city, need precautionary medical examination and advice, what shall be said of the school children of the land? Parents are notoriously careless and unmindful of the slight deviations from normal in their children, and often people who know better, and who really want to do the best they can for their children, let things drift until some day the ailment, whatever it may happen to be, gets so bad that preventive measures no longer apply, and there is a cure to be effected in a case where a cure may or may not be possible.

Some of the parents are too ignorant to know what is best for their children, and too ignorant even to know when a child is ill and out of sorts unless it is actually down in bed with an acute illness. However, many of these ignorant people do not object to the school authorities taking the necessary measures to relieve their children of the commoner forms of child disability, such as defects of vision, bad teeth, skin lesions, and so on.

Unfortunately, it is another class of persons

who interfere most with attempts to examine and correct abnormalities in school children, namely, a group of men in this country, banded together in the name of Medical Freedom, and whose activities and whose enormous expenditures are wholly in the interest of quack medicines.

Fortunately, quack medicines, with all their criminal angles, are going out of vogue as the people become better educated, and perhaps we shall be allowed some day to approach the high standards of Oriental, or rather Chinese, medical philosophy, in which the doctor is paid to keep people well, with a convincing inference that if he allows them to become ill, he must cure them without a fee.

Let us prosecute the work of examination of school children, since by this means we can make more progress in the field of preventive medicine than by all other means combined.

Training of Nursery Maids.

There seems to be an easier feeling among the hospitals in regard to the supply of young women upon which we may draw for our nurses. The scope of nursing is broadening immeasurably; the hospitals are coming to realize that they cannot make scullery maids and domestic servants of their pupil nurses and still hope to obtain their share of probationers.

After the pupil obtains her training, to the point of graduation, she finds many fields open to her, and the most widely divergent temperaments may find congenial fields for their activities. For these reasons more young women are looking toward nursing as a career, and there is consequently a wider choice for the training schools and naturally a higher class of women for final selection.

There is one type of woman's work in the field of nursing, however, to which it seems too little attention has been paid, namely, the half nurse, half maid, half mother's helper—the companion in the home in which there are small children.

Young women, to excel in this field of woman's work, need not necessarily be highly trained; they need not of necessity be very well educated. The virtues and capacity of which they are most in need are reliability, constancy, kindliness, truthfulness, energy, and mental and physical versatility.

A few institutions have experimented with this class of women, and there is no longer any question about the success of the efforts. Why do not more hospitals having maternity and children's departments take up this work?

At first there was a feeling, on the part of trained nurses and pupils, and even among some institution executive women, that these nursery maids were destined to take the places that ought to be occupied by trained nurses. That feeling seems to have died out, and at least in a few institutions the nurses show a disposition to help these girls less fortunate than themselves in the admission to a career.

Some of the girls who apply for training as nursery maids ought really to be in the training schools for nurses; some of them are high school graduates, come from excellent homes, and have had good home bringing up. A few of them have had to choose the nursery maid course of training because their earnings were needed and they could not afford the three years of the nursing training.

In one institution where nursery maids have been trained now for several years, they have taken their place as important factors in the community life, and families that have been able to secure their services are regarded by their neighbors as extremely fortunate.

If preventive medicine is the demand of the hour, and if hospitals are to lead their communities in those things that conserve the health of the people, what more important work is there than to train and send out into the community a class of young women who can contribute very greatly to the mental, physical, and moral health of the children, through their influence in the introduction into the homes of the principles of sanitation, hygiene, child feeding, wholesome recreation and occupation, and the things generally that mean the broadening out and the proper development of the potential bone and sinew of the national life—the child?

Let us have more nursery maids, and let us train them in the practical, everyday things that sum up into that indefinable, beautiful, meaningful charm, "the home."

News Editors for The Modern Hospital.

It gives THE MODERN HOSPITAL great pleasure to announce the creation of a corps of news editors, or special correspondents in various parts of the country, who, as a part of the regular organization, will hereafter undertake to keep our readers informed on hospital activities in this country and Canada. The list of those whose services we have been able to enlist is as follows, with the territory to be covered by each:

Mr. W. W. Kenney, Superintendent of the Victoria General Hospital, Halifax, N. S., for Nova Scotia and New Brunswick.

Miss S. E. Demarest, Secretary of the Grenfell Association of America, for Labrador, Newfoundland and the far Northeast.

Dr. G. W. Sinclair, Superintendent of the Winnipeg General Hospital, for Manitoba, Alberta and Saskatchewan.

Dr. Malcolm T. McEachern, Superintendent of the Vancouver General Hospital, Vancouver, B. C., for British Columbia, the Yukon and Alaska.

Dr. H. T. Summersgill, Superintendent of the Hospital of the University of California, San Francisco, for the sections west of the Rocky Mountains and south of British Columbia.

Dr. Moses Collins, Superintendent of the National Tuberculosis Hospital at Denver, for Colorado, Montana, Idaho, Wyoming and Utah.

Dr. L. B. Baldwin, Superintendent of the State University Hospital, Minneapolis, for the Dakotas, Minnesota and Iowa.

Mr. F. E. Chapman, Superintendent St. Louis City Hospital, St. Louis, Mo., for Missouri, Arkansas, Kansas, Nebraska and Texas.

Dr. C. D. Wilkins, Superintendent of the Louisiana State Charity Hospital at New Orleans, for the Gulf States.

Dr. Wm. H. Walsh, Superintendent of the Children's Hospital in Philadelphia, for Pennsylvania and contiguous states.

Mr. Pliny O. Clark, Superintendent of the Ohio Valley General Hospital at Wheeling, W. Va., for the Virginias and contiguous territory.

From time to time other members will be added to the corps until every community will be covered, and the work will be extended to New Zealand, Australia, the Philippines, Asia and Africa; and eventually competent correspondents will be located in the European centers.

It is the function of this splendid corps of writers not only to furnish news for THE MODERN HOSPITAL from the several sections, but to write short, crisp news-letters about the problems and the engaging activities of the hospitals in the several communities. It is their intention to keep in touch with their hospitals and with the leaders of thought in the institutions, to secure contributions on live topics, and, in short, it is the purpose of each member of the corps to keep the readers of THE MODERN HOSPITAL fully conversant with the best thought and the best work of the hospitals throughout the land.

THE MODERN HOSPITAL commends these representatives to the hospital superintendents, trustees and medical staff members in the respective sections, and urges that they give them cooperation along every line that has for its object the upbuilding, the development and the progress of every agency engaged in the work of the public health. In proportion as the hospital people support their representative, and help him, just in that proportion will all the hospital people everywhere be enabled to draw from a vast common storehouse of knowledge and information.

Papers on Special Foods.

In another column of this number of THE MODERN HOSPITAL will be found a paper by Mr. John Phillips Street, director of the Agricultural Experiment Station, New Haven, Conn. Mr. Street, working in conjunction with Professor Mendel of Yale University, has done some of the most authoritative work in the field of special feeding and food chemistry that has been presented to the medical profession. He proposes now to write a series of papers for THE MODERN HOSPITAL on foods for the sick, feeding values and studies in metabolism. The paper presented in this number is the first of that series.

THE MODERN HOSPITAL is very much elated over its success in persuading Mr. Street to prepare this series of papers. Because of the newer discoveries and the newer work in pathology, physiology and physiological chemistry, the medical profession has arrived at a stage where it is in possession of the necessary knowledge that will permit it to employ special foods for the treatment of some diseases that seem to have evaded drug therapy. For some years the profession has been vastly handicapped by its inability to get the things done for it in the hospitals that it needs to have done; to get the foods properly prepared and properly administered that it needs in the treatment of special diseases.

We have undertaken to cure this defect in medical practice by improving the dietary departments in our general hospitals, by building up a better trained class of dietitians, and indeed vast improvements have been made in this direction of recent years.

Now we find that there is a want of cooperation and want of collaboration between the medical men in the hospitals and the dietitians, neither seeming to understand the other; the medical men failing to appreciate in most cases the physical difficulties to be overcome in administering a hospital dietary, the dietitian failing to appreciate the necessities of the medical men.

Believing that a bridging over of the two independent activities of these two tremendously important factors of the public health was highly necessary, and believing that the chemist and physiologist working in and out from his laboratory could be the best possible agency to fuse the scientific and the practical in the hospital dietary, we arranged with Mr. Street to prepare this series of papers. We believe that, before he has finished, a far better understanding will be had between the administrative and the medical branches

of the hospital, that the scientifically trained man wishing to work in metabolism and to study his patient from the standpoint of the laboratory as well as the clinic will be able to prescribe what he wants in the way of special foods, and that the trained dietitian will be able to fill the prescription.

If this shall be brought about, THE MODERN HOSPITAL will be wonderfully repaid for its efforts, and Mr. Street, upon whom falls the brunt of the hard work, and Professor Mendel, who so kindly added his persuasion to ours with Mr. Street, will have made a contribution for which they will have earned the gratitude not only of the medical profession, but of all the people.

Announcement of New Departments.

It will be noted that this number of THE MODERN HOSPITAL contains several new departments.

We have been extremely fortunate in securing the active interest and cooperation of some of the strongest men and women, and some of the most efficient agencies engaged in planning and working for the public health.

There is to be a regular department devoted to the prevention and cure of tuberculosis, to be conducted under the auspices of the National Association for the Study and Prevention of Tuberculosis.

Miss Carolyn Conant Van Blarcom, the active head of the Association for the Prevention of Blindness, has undertaken a department to be devoted to that phase of the public health, and her department will also include maternity and midwife work. Miss Van Blarcom gives us her first contribution this month, on the highly important and little understood subject of the evils of wood alcohol.

Dr. Eugene L. Fisk, Director of Hygiene of the Life Extension Institute, will conduct a department for us on the activities incident to the study of means for increasing longevity. His first interesting paper is published elsewhere.

A department will be conducted under the auspices of the New York Association for Improving the Condition of the Poor. There are many bureaus of this most effective body, such as a bureau of Public Health and Hygiene, a department of Social Welfare, a bureau of Educational Nursing, a department of Family Welfare, a bureau of Welfare of School Children—and others. This month the department begins with a most instructive paper by Dr. Donald B. Armstrong, on a "Hospital Home Experiment with Tuberculous Families," and with a paper on "The People's Laundry to Supplement Public Baths," by Holland Hudson.

The Committee on Dispensaries and Out-patient Work of the American Hospital Association will conduct a department along the lines of their activities.

A department of Mental Hygiene and the Institutional Care of Mental Cases will be conducted by Dr. Thomas W. Salmon, Director of the National Committee for Mental Hygiene.

From time to time other departments will be inaugurated under competent auspices, until we are covering effectively all the activities that have to do with the public health.

Miss Jordan's Paper.

Unfortunately Miss Jordan's second paper on the administration of a self-supporting small hospital was late in arriving at the editorial office and at the last moment was crowded out. It will appear in the March number and the series will run without further interruption.

A Unique Christmas Card.

A rather new and certainly unique Christmas card was issued this holiday season just past by Mr. Asa Bacon, superintendent of the Presbyterian Hospital, Chicago. It consisted of a little four-page booklet, with pictures of the hospital and nurses' home on the outside covers, and two pages of artistically paragraphed "maxims" on the inside pages. About one thousand of these Christmas cards were distributed to friends of the hospital and to the "hospital family." Some of the maxims follow:

"There is so much bad in the best of us,
And so much good in the worst of us,
It is hardly fair for any of us
To speak ill of the rest of us."

All make mistakes, some more than others. "To err is human." He succeeds best who makes the fewest mistakes; and most quickly corrects them, when discovered.

Tact is the ability to please rather than offend, by saying or doing the right thing in a pleasant way at the right time, ignoring petty slights and insults and leading disagreeable people to become your friends.

Do your best. Put your best efforts in your work, no matter how simple or difficult the task.

Your faithful service and cooperation adds to the character and individuality of the hospital.

Efficiency is the ability to perform work in the shortest and quickest way, by omitting every useless movement.

Cooperation. "All real progress of the individual, or of society, comes through the joining of hands and working together in a spirit of helpfulness for the common good."

"When wealth is lost, nothing is lost;
When health is lost, something is lost;
When character is lost, all is lost."

Be polite. Help the weak and never by word or act offend another.

"I am passing through this world but once. I will therefore do my best every day, and do all the good to all the people I can."

Stricter control over tuberculosis patients in state sanatoriums to prevent the infection of others was favored in resolutions adopted by the American Sanatorium Association in session at Middleboro, Mass., in December. Another resolution denounced the publication by newspapers of advertisements of patent medicines or quack remedies and devices purported to be beneficial in tuberculosis.

BUILDING THE HOSPITAL—ORGANIZATION AND METHODS.[1]

Work of the Building Committee—The Advisory Committee, Its Personnel and Functions—Employment of Architect and Engineer—Their Fees and Functions—Digesting the Plans—Laying Out the Work by Steps.

BY OLIVER H. BARTINE, SUPERINTENDENT THE NEW YORK SOCIETY FOR THE RELIEF OF THE RUPTURED AND CRIPPLED.

Of the vastness of the annual hospital building program little is known even by those actively engaged in hospital work; and no conception of it is grasped by the general public. When we seriously consider that there is annually spent in this country one hundred and twenty-five millions of dollars for the erection and equipment of new hospital buildings in an endeavor to accommodate approximately six hundred thousand additional patients, then the magnitude of the work is forced upon us. We are agreed, I assume, that the demand for hospital treatment is steadily increasing and that it is to the interests of the sick that hospital treatment should become more general.

It is, then, well worth while that we should examine carefully into the general customs connected with the erection of hospital buildings, and determine beyond a doubt whether the maximum of efficiency is being reached or whether there are avoidable wastes, extravagances or shortcomings. For just in proportion as wastes, extravagances or shortcomings prevail the service which should be obtained from the vast expenditure mentioned and the general usefulness of the hospitals are curtailed.

It is common knowledge that much of the money given for charitable or beneficent purposes is lost to the beneficiaries through extravagance and inefficiency in management, but it is the feeling of the writer that this applies with less force to the field of the hospital than to any other branch of charitable work. Nevertheless, in so far as such is the case the resultant suffering falls altogether on the sick, those for whom alone the work is carried on. Their good or ill is in the balance. No work of helpfulness more readily commands our sympathies; therefore shall it not also command the maximum of our skill and efficiency?

Naturally the first step looking toward the erection of a hospital building is the appointment of the building committee. Herein may lie the success or failure of the entire project, therefore the greatest judgment of the board of trustees should be brought to bear upon this most important matter.

The duties of the building committee are vastly diversified and call for rare judgment, experience, skill, patience, and generosity in the giving of time. These duties include the major control of the financial problems, the selection of the architect and the consulting engineer, the choosing of the site and of materials for the building (in consultation with the architect), the letting of the contracts, the procuring of furnishings and supplies, and the solving of a thousand and one knotty problems.

For the successful accomplishment of this work an efficient and thorough organization is absolutely essential. Without it the best final results are impossible.

Whether or no the funds are already available may have a direct bearing upon the selection of members of the building committee. If the money must be raised, one or two members of skill and notable standing in the financial world are most desirable. If the fund is already available the problem becomes one of hospital building construction and equipment only, and the appointment of the committee is to be determined accordingly.

The building committee should not be large; a large committee always proves unwieldy. It should consist of three or five, or possibly four, members, taken from the board of trustees, preferably all men, and thoroughly familiar with the field of work and methods of the hospital. It is especially to be desired that the membership of the building committee should contain two or more men who have had a broad experience in building operations, and operations of a similar nature. It is also most desirable that one member of the committee should be a lawyer. If he be experienced in or at least familiar with contract law, so much the better.

The building committee having been appointed, it should promptly organize by the election of a chairman and secretary, unless the designation of these officers has been made by the board of trustees. It is recommended that a regular date of meeting be determined upon, either monthly, semi-monthly or weekly, as will best meet the demands of the work. The services of a stenographer, who may also serve as a clerk to the committee, will be found most helpful. Detailed minutes of the meeting can then be made and a copy thereof should be sent after each meeting to each member of the committee for filing and reference.

Inasmuch as this building committee, in reality, simply represents the board of trustees in all its transactions, copies of the minutes of each meeting of the building committee should be properly filed with the secretary of the board of trustees. It is also regarded as essential that at least monthly the meeting of the building committee should be followed by a meeting of the full board of trustees, at which meeting the general plans and work of the building committee and important matters before them could be broadly discussed and helpful advice could be obtained from the other members of the board of trustees. Discussion of details is not contemplated in this recommendation.

The erection and equipment of a hospital building involves a vast number of details which no one or two men can be expected to master unassisted. To obtain the best results and the advantages of the greatest possible amount of experience and information the appointment of an advisory committee or staff, as such, is urgently recommended, this advisory committee to be so constituted as to include men of experience in as nearly as possible all the details or problems involved.

First and foremost the superintendent of the hospital should be a member of this committee.

The surgeon-in-chief, president of the medical board, architect, consulting engineer, builder and operating engineer should constitute the remaining membership of the advisory committee. In the case of certain classes of hospitals, particularly those partaking of the nature of homes, or those especially intended for the service of women, one, or possibly two, women may be included in the membership of this committee, assuming that there are available women acquainted with the work and needs of the hospital. It cannot be denied that the directress of nurses, in many instances, has rendered most valuable help in the building of the newer hospitals; therefore she should also be favorably considered for the membership of this committee.

In mentioning the superintendent of the hospital it is assumed that the building proposed is being erected for an

[1] Read before the Hospital Alliance of the City of New York Academy of Medicine, December 1, 1914.

existing institution. If such is not the case the first step of the building committee (or the board of trustees) should be the selection of a superintendent for the new hospital. It is inconceivable that a body of laymen can hope to erect and equip a hospital building without the constant advice, cooperation and coordinating work of an efficient superintendent. No other man can better appreciate the combined administrative, surgical, medical, and general service problems, the needs and idiosyncrasies of patients and staff, the correlation of departments, the essentials and the nonessentials incident to the building, and the very many big and little details which will make or mar the future of the building.

The charge that the superintendent will, if given opportunity, make excessive and extravagant demands for space or equipment is entirely without foundation. The competent superintendent realizes the limitations of available funds quite as well as can any member of the committee, and he is much better able to distinguish between the essential and the nonessential. In any case it is better to risk some slight excess of space or equipment than the omission of some essential feature of the hospital, or a correlation of units or departments so unfortunate that the entire future usefulness of the hospital is limited.

The superintendent should consult with the heads of all the departments of the institution, and in the visitation of other nearby hospitals he should invite them to accompany him. It may not be questioned that these associates will absorb many ideas and that they will thus be able to offer many suggestions to the superintendent, whose duty it is to classify and select those of value, which he should in turn offer to the joint building and advisory committee, including the architect, consulting engineer and builder.

The surgeon-in-chief and the president of the medical board must, of necessity, be most important factors in the work of the committee. No one connected with the institution will understand as will they, the special requirements of their departments and work. They should, however, supplement this understanding with a thorough and elaborate study of the most modern hospitals, equipments and work as illustrated in the newer hospital plans and construction. They should also advise freely with their associates, whose helpful suggestions should be submitted to the superintendent and advisory committee.

Practical experience has demonstrated that it is not feasible to include a greater proportion of the hospital staff in the membership of the advisory committee. Much confusion will be eliminated by requiring the surgeon-in-chief and the president of the medical board to consult with the other members of the staff, sort out and harmonize the conflicting recommendations and present the worthy suggestions in proper form. Many a hospital has suffered irreparably by an attempt on the part of the building committee or architect to provide for a mass of undigested demands. Naturally the final results have been chaotic and most unsatisfactory.

The architect, the consulting engineer, and the builder should also be active members of this advisory committee because they are vastly important factors in the development of the plans and in the construction and equipment of the building. Too often these parties are deemed mere hirelings, viewed with distrust and kept at arm's length. Many an architect and engineer can tell of instances where they have been instructed by the building committee to refrain entirely from consultation with the superintendent of the hospital, its staff, or its operating engineer. They are told that, being employed as experts, such association should be unnecessary and will lead to the adoption of extravagant demands. No wonder that many hospitals are built with rooms and equipment that will never be required, or are put to later and excessive expense in making changes or adding equipment that should have been originally provided. Cordial cooperation of all those associated in the work may alone be depended upon to assure a complete plant and building.

The architect is a specialist in esthetics, planning and construction, but most certainly he is not a doctor, surgeon, or hospital superintendent, nor is he acquainted with their work. Granting that the particular architect in question has planned one or a dozen hospitals, it does not follow that he knows all about the needs of the new hospital. Most assuredly experience in the design of hospital buildings on the part of the architect is a desirable asset to the new hospital, but it is not an uncommon thing to find that entirely too much responsibility has been placed on the architect, on the theory that as an expert he knows just what is required and what will best meet the requirements, and needs no suggestion or guidance. Such a plan waives entirely the immense amount of valuable information and experience which the superintendent, doctors, and others associated in the hospital have accumulated through years of work and observation in their own and other hospitals.

Within his particular field, the consulting engineer, though he may and should be an engineer experienced in hospital work, should, for reasons similar to those stated in the case of the architect, neither be expected to nor allowed to carry on his work without intimate contact and association with the other members of the advisory committee. Especially should the consulting engineer and operating engineer work in close association and harmony.

The suggestion that the builder should be a member of the advisory committee may seem novel, but there are very good reasons why this should be so. The builder can give the most reliable information concerning the effect of different sites upon the cost of building the hospital, the cost of various materials, and the time required for building; the effect of the selection of different materials upon the time element; and other practical questions. Only a careful selection of the builder by the building committee, acting with the advice of the architect, is necessary to secure reliable, unprejudiced, practical building advice by this means.

The hospital's operating engineer, assuming that the hospital has one, should by all means be a member of this committee. Too much praise cannot be given to the operating engineer of the larger hospitals. His experience in the operation and maintenance of existing equipment and appliances, and in the arrangement of plants will serve as the basis of many suggestions of material help to all concerned.

It is to be most emphatically recommended that when the construction of the building has advanced up to the point of the installation of the mechanical equipment, the operating engineer should be placed upon the work as the hospital's inspector. In this capacity he will be of inestimable help to the owners, architect, consulting engineer, builder and equipment contractors. When the stage is reached where the heating or power plant must be put in operation for drying out the building, or other service, the operating engineer should be placed in charge of the plant. The plant at this time should be operated preferably by the owners, but the same purpose can be accomplished by providing in the specifications that the builder shall employ the hospital's operating engineer for this purpose.

Such a plan assures the best of workmanship and materials in every detail of the mechanical equipment, more positively than can be done by the usual architectural and

engineering supervision, but more important and valuable still, it enables the engineer to become familiar with every detail of the construction and equipment. When the building is completed and occupied he will, beyond question, be able to conduct and maintain the plant to the best advantage and in the most economical manner.

This service on the part of the operating engineer is not intended to supplant, but rather to supplement the work of the clerk of the works or superintendent of construction, who is selected by the architect but employed by the owner at an extra compensation, the duty of the latter being to give his immediate and constant attention to all construction work and the materials and labor employed therein. The operating engineer is rarely capable of supervising the general building construction work, and rarely is the clerk of the works an expert on the installation of the mechanical equipment. Thus the work of one supplements the work of the other.

In some cases it may seem advisable to treat the architect, consulting engineer, builder, and operating engineer as ex-officio members of the advisory committee, but inasmuch as the committee is advisory only this does not seem necessary.

Special meetings of this advisory committee will, without doubt, be required from time to time to thresh out multitudinous minor questions, but in general the meetings of this committee should be held jointly with those of the building committee, the officers of the latter acting as officers of the joint committee. Manifestly special or separate meetings of the building committee will be required, for it is upon the building committee, as the direct representative of the hospital, that falls the responsibility of final arbitration on all questions save only those requiring the action of the board of trustees. Weekly meetings of the joint committee are strongly urged, especially in the early stages of the work. Only thus will delays be avoided and will all necessary information be forthcoming at the proper time.

Consultations of the surgeon-in-chief and president of the medical board with their staffs and with the superintendent should be full and frank, but without too much self-assertiveness and without any self-prejudice, and this attitude should prevail among all of those associated in the work. With all praise to the big, able, and generous men who have given much of their time and of themselves to the work of hospital construction, it is a fact that many hospitals have been erected which have been the subject of serious and just criticism because someone of unusual force, of strong position or apparent authority, whose judgment the other members of the committee feared to question, has been permitted to impress his biased recommendations or views upon the work of the committee. In such cases the hospital and its patients are the chief sufferers, and the staff of the hospital is called upon to offer many apologies.

Plans of the proposed hospital, from the earliest stage of sketches to final construction plans, should at all times be kept on file at the office of the superintendent where all members of the hospital staff may consult them. It should be made known to the staff that these plans were there for this purpose and that suggestions relating thereto on the part of the staff should be made to the surgeon-in-chief, to the president of the medical board, or to the superintendent, as the case might be; in other words, to the head of the department in which originated the suggestion.

No more important duties fall within the province of the building committee than the selection of the architect, consulting engineer, and builder. The committee should make the most careful studies and investigations and select those best qualified by experience to carry out the work. This selection should be made without the influence of friendship, mere acquaintance or prejudice such as all too often prove to be the determining factors.

Frequently the selection of the architect and consulting engineer is determined upon the basis of the fee charged, and the man chosen is one who asks a fee less than the usual rate, or less than that charged by the best architects and engineers. Could anything be more absurd? As reasonably might we select our doctors or lawyers upon the same basis. It is recognized that there is ample justification for the demand of a higher fee by one doctor or one lawyer than another. Ability is just as variable and just as desirable, nay, essential, in the architect and engineer as in the doctor and lawyer.

The architect should be selected because of his ability, character, experience and organization, his willingness to cooperate with the building and advisory committees, his demonstrated capacity for planning and building conveniently, efficiently, and economically. The architect who is extravagant in his ideas and in his selection of materials should be avoided, as should the architect who is lacking in experience or organization, because he will probably involve the hospital in unexpected expense before the building is built and equipped.

The committee should investigate the previous work of the architect, consider and study its character, completeness and relative cost.

The selection of an architect for a hospital by means of an architectural competition is the least desirable method that can be suggested. In such a case, however, the competition should be conducted according to the rules of the American Institute of Architects and should be confined to architects of sufficient experience in hospital construction.

In general, the remarks made concerning the selection and employment of the architect apply with equal force to the matter of the selection of the consulting engineer. To many, however, the necessity of the employment of a consulting engineer is less appreciated, but it is none the less real. The architect deals with the plan and scope of the building and with all of its esthetic requirements, while the engineer deals with the mechanical or engineering equipment. The first provides the building and the second provides that which makes it habitable, workable, convenient, and useful. The one handles an architectural problem and the other an engineering problem. And the two lines of work involve essentially different temperaments, education, training, and experience. No one man can accomplish both successfully. Very few architects, probably not more than a dozen in the country, employ mechanical or sanitary engineers in their offices.

The consulting engineer should be well informed and thoroughly experienced in hospital work and have an organization capable of successfully carrying on the work.

Just a word regarding the relations and fees of the architect and engineer. The schedule of charges of the American Institute of Architects provides for a payment to the architect of six percent on the cost of the entire work and an additional payment to cover the cost of the consulting engineer's fees, where required; but it does not state the amount of the extra payment or where it is required. The usual engineer's fee is the same as the architect's, but it is based upon the cost of the mechanical equipment only.

The question will arise whether the architect is to be

paid his fee on the entire cost of the building, including the equipment upon which the engineer is paid his fee. The architect must so arrange his plans as to provide spaces as required by the engineer for coal, boilers, auxiliary apparatus, ventilating and heating apparatus, ducts, plumbing fixtures and piping, electric plant and equipment, refrigerating apparatus, elevators, vacuum cleaning plant, laundry and kitchen equipment, etc. It is also principally the duty of the architect to see that the building and its equipment properly come together, both during construction and upon the completion of the building. To a large extent also the architect acts as executive in such matters as rendering certificates of payments to all contractors, keeping the records of all contracts, and the like. All of this involves much time and expense to the architect. At the same time he is not called upon for this professional knowledge and experience and he is relieved of the expense of making the plans and specifications for the mechanical equipment and the supervision of its installation. A recognition of these facts has led to the frequent and successful adoption of a plan whereby the architect is paid six percent on the cost of the building without equipment and three percent extra on the cost of the mechanical equipment, while the engineer is paid six percent upon the cost of the mechanical equipment only. While this involves the payment of an extra three percent on the cost of the mechanical equipment it involves but a very small percentage of the total cost of the hospital, usually about one-half of one percent; and the great advantages obtained by the employment of the consulting engineer certainly warrant this expenditure. In the first cost of installation, quality considered, and in the reduced annual cost of maintenance and operation this small extra expenditure will be saved over and over.

To the engineer should be entrusted the design and supervision of the entire mechanical equipment, including the power plant, heating and ventilating plant, lighting and other electrical equipment, plumbing, elevators, refrigeration, vacuum cleaning, incinerators, and laundry and kitchen equipment. These are all parts of the mechanical equipment.

The plan of utilizing manufacturer's or contractor's plans and specifications for heating and ventilating, plumbing, lighting fixtures, elevators, laundry and kitchen equipment—as is frequently done by hospitals and architects—cannot be too strongly condemned. Many hospitals have, because of so doing, paid vastly too much for these equipments, and they have had foisted upon them apparatus which signally failed to meet the needs of the hospital, and other apparatus for which no possible use could be found. These are engineering problems and should be left to the consulting engineer, and they should be solved without the prejudicial influence of contractors or manufacturers, who manifestly have selfish or personal ends to serve.

The selection of the builder is a most important matter. A poor builder means a poor hospital, and the best of committees or architects cannot alter this fact. Delays, annoyances, and poor work will prevail throughout. Experience in hospital construction on the part of the builder is desirable.

The selection of the builder by means of competitive bidding is not the only possible method, nor is it the best. By this method the service of a builder is not available in the early stages when such services are very valuable. The "cost plus percentage" method of employing the builder has many advantages which should be thoroughly investigated by the building committee. Under this plan, the builder, who should be selected at the outset, guarantees that the cost of the hospital of a certain size shall not exceed a certain sum, and he is paid a certain percentage, usually five to seven percent, upon the actual cost. This plan eliminates vexatious problems, such as extras, and makes the builder, from the first, a confidential associate of the committee rather than an antagonist or mere hireling.

Allied with the problem of selecting the builder is the problem of selecting subcontractors and equipment contractors. It is believed that such work as the heating and ventilating, plumbing, and electrical work can best be let as separate contracts. This subject of contracts, however, is too large to be treated in this paper.

With an organization such as is above outlined, cordially working in harmony, the success of the venture is assured and the ways are prepared for real progress.

Immediately upon the formation of the joint committee a careful and expansive survey should be undertaken of the field and work of the new hospital and of the exact nature of the service to be demanded of the building and of its needs in detail. This should include a study of the class or classes of patients to be served, of the probable number of private rooms or ward patients for which provision must be made, and of the requirements of the surgical, administrative, mechanical and other departments. Every need should be considered.

In the meantime visitations to other hospitals of a similar nature should be made extensively, and the needs, method, construction, and equipment of the most modern hospital work and construction should be studied intensively so as to obtain the most practical and ideal results. In these visits and studies all members of the building and advisory committees should take part. Cooperation in this work will surely bring wonderful results.

In these visits, materials, equipment, and methods should be the chief points of study. With these investigations as a basis the committee will be in a splendid position to consider methods, and especially materials, for the new building. Concerning the latter, emphasis should be laid upon the fact that the use of cheap materials involves always high maintenance cost and often irremediable dissatisfaction. Extreme care should be exercised that only those materials should be used which will exactly fulfill all requirements and prove durable. This should apply to every detail of the building and its equipment. Better sacrifice in amount than in quality.

At the beginning of the work of the committee a program or plan of steps in the work should be outlined. First in this plan would be the study or survey of the work and needs of a hospital, followed by the visits to other hospitals, the selection of a site (unless this be already available), the lay-out of the plot, including the arrangement of the building or buildings, the orientation of the building, study of water supply, sewage disposal, gas and electric service and telephone service, foundation problems, structural, exterior and interior materials, and so on into the many details involved.

A thorough study of all of these problems lays the best possible groundwork for the preparation of the plans. The architect should then be called upon to prepare tentative sketches of the building, embracing the features determined upon by the building committee after conference with the advisory committee. These sketches should be presented to the joint committee as a basis for discussion. Multiple copies should be available so that each member of the committee may have a separate copy. The surgeon-in-chief, the president of the medical board, and the superintendent should take their copies of the sketches to their associates in the work of the hospital and confer with them.

Thus many helpful suggestions may be secured. Such suggestions should, however, be considered with the superintendent before being presented to the committee.

After a reasonable time the committee should again meet and a general discussion should be had. Such modifications in the sketches as may be agreed upon by the joint committee and approved by the building committee should be made by the architect. Revised sketches should then be submitted to the joint committee. In this work the consulting engineer should cooperate with the architect. When the plans have been put into the form best meeting the views of the joint committee and are approved by the building committee the latter should authorize the architect and engineer to prepare working drawings for the construction of the hospital in accordance with the approved sketches. During the progress of this work many problems will arise which should be brought to the attention of the joint committee. Minor modifications of the plans may be deemed advisable from time to time, but if the preliminary work has been well done these changes will be slight.

When the architect's and engineer's working drawings are presented to the committee they should be carefully scrutinized to see that the details previously agreed upon have been embodied and that a successful arrangement of them has been made. If so, these plans should be accepted and adopted; and after this date only the most urgent reason should lead to a departure from these plans. The architect and engineer will then prepare specifications and all is ready for actual construction to begin.

In the above little has been said concerning matters financial. It has been assumed that funds are available. If not, a separate problem is placed before the building committee. The subject is one for special treatment.

If funds are available it is perfectly possible to determine just how large a building may be built with the funds available. If funds must be raised the size of the building should be determined, from which the cost may be obtained.

The cost of hospital buildings per cubic foot of space should be the governing factor in determining the size and character of the building to be built.

By a proper selection of the particular hospitals which in character and materials used, nearest correspond with the proposed hospital, and the use of careful judgment a correct unit cost may be determined, thus the size of the building which can be built for the funds at hand or the cost of a building of a certain size may be determined. This data should be checked with the builder's estimates.

If a plan such as has been outlined above were applied to state, municipal, and other public buildings it would not so often become necessary to rearrange or reconstruct new buildings in order that they may efficiently serve the purpose intended. Many hospital buildings when completed are not adapted for the purposes for which they were designed. In many cases the money is not available for alterations and it becomes necessary to carry on the work under disadvantages to the patients, the medical staff, and others interested in the work. Large sums are annually expended in alterations in new buildings, and much of this money could be saved by careful study and planning.

The committee should endeavor to build the best possible building within their means and to obtain the best materials and equipment at a minimum of cost. A very grave mistake is made by many boards in attempting to build a million-dollar building for $750,000.00, or at that ratio. A hundred percent perfect building cannot be built for a seventy-five percent appropriation. An attempt to do so only means difficulty for the committee, architect, engineer, and builder, as well as for the hospital staff, who, with the patients, suffer the most in the end. Rather than make the serious mistake of attempting such a saving in construction cost it is urged that a building be undertaken which can be built within the available funds, using the best of materials and equipment, and that it be so done that it can be later added to as funds become available.

The increased interest of recent years manifested in this work by members of the Hospital Alliance, American Hospital Association, and by hospital trustees, architects, engineers, builders, and various hospital journals, has been a great factor in the advancement of hospital construction and equipment.

WHAT HOSPITALS CAN DO IN PREVENTIVE MEDICINE.[1]

Report of Committee Appointed to Determine How Far Hospitals Should Go—How Their Preventive Work Can Best Be Done—What Relations Hospital Work Should Bear Toward the Work of Other Agencies.

The committee consisting of Dr. W. L. Babcock, Mr. Sidney Goldstein, Miss Charlotte Aikens, Mr. Michael M. Davis, Jr., and Dr. John A. Hornsby, chairman, was appointed at the Boston meeting under the following resolution introduced by Dr. Goldwater:

"Resolved, that a committee of five be appointed by the president to study the character, cost, and value of direct and indirect work for the prevention of disease, now conducted by hospitals and dispensaries, to arrange in the order of their importance and practicability successive steps for the extension of such work and to prepare methods for its financial support for its correlation with similar work of other agencies, public and private."

REPORT OF THE COMMITTEE.

The resolution creating this committee touched on a number of points in a very broad field. The committee intends to pursue the matter during the coming year and presents the following only as a preliminary:

We have confined this report to a single question, "What practical steps should a hospital now take for doing preventive work?" "What are the obligations of the hospital in the direction of preventive medicine?"

The trend of modern medicine is strongly in the direction of prevention, and the hospital, reflecting as it does the progress of medicine, must follow this trend. A hospital is not fulfilling its duty to its patients unless it combines with the curative work of its wards sufficient preventive work of a clinical nature to minimize the chance of recurrence of disease. A large proportion of patients are able to leave the ward when they are not able to return to work or to family life without endangering their return to health. If the patient is from a well-to-do home, the family and the family physician provide this after-care. If the patient is not from such a home, the hospital must provide it or else fail to do a thorough job for that patient.

How shall the hospital provide this after-care as a part of the required preventive work? In three ways:

1. Through the out-patient department.
2. Through a convalescent home.
3. Through a social service department working in cooperation with other medical, charitable, and educational agencies in the community.

[1]Read at the sixteenth annual conference of the American Hospital Association, St. Paul, August 25-28, 1914.

At this point we may divide hospitals into three classes:

A. The large general hospital in the large city.

B. The small semi-private or special hospital in the large city.

C. The hospital of small or moderate size in the small city or town.

A. Large general hospitals in large communities have, in many cases, out-patient departments. Every such hospital needs one. The out-patient departments that now exist are often not systematically used as a means of follow-up work for patients discharged from the wards. One frequent defect is that out-patient clinics are overcrowded; another is loose organization. The out-patient department should be medically organized in the most intimate relation with the hospital, and should be under the personal administrative supervision of one of the assistant superintendents.

Every large hospital needs a convalescent home, or access to such a home or homes supported by their agencies. A convalescent home is a direct financial as well as a medical economy to a hospital.

Every hospital in this class needs a social service department. Proper after-care cannot be provided without the aid of such a department. Through the same means the assistance of charitable agencies is secured for patients or families who need such aid. It is most important that, in establishing social service, a properly trained worker be secured. Adequate salaries must be paid. On the other hand, social service is generally found to awaken new interest in the hospital and to attract financial support more readily.

The work of the social service department should be planned so as not to duplicate the work of charity organizations and municipal departments already covering their special fields. The cooperation and assistance of these organizations and departments should be enlisted, wherever possible, in the preventive work of the hospital. The social service department is the chief agent through which this outside cooperation is practically secured.

B. The small or special hospital in the large city needs no less to do preventive work than the large institution, so far as it receives the same social class of patients. It will sometimes be possible for such hospitals to use the out-patient departments of other institutions. The extent to which such hospitals need to have their own out-patient departments and their own social service departments, in order to meet their responsibilities for preventive work, should be seriously studied by each hospital for itself.

C. Special attention should be directed to the problem of preventive work in the hospitals located in the smaller communities. In recent years a certain number have established out-patient departments, but as yet the large majority have none. We believe that every hospital of this class needs an out-patient department, if only to give after-care to its discharged patients. By giving medical supervision and care to patients after they have left the wards, earlier discharge is promoted, economy of hospital service is effected, important preventive work can be done, and the hospital is kept better informed of the results of its ward work. As many of the smaller communities are less well provided with charitable societies than are the large cities, it is of special importance that hospitals in the smaller places should have a social service department. A hospital thus equipped with a dispensary and with social service can be a very large factor in preventing disease and improving health conditions in its city or town.

It would doubtless be well if every hospital in a city or town of moderate size should appoint a committee on preventive work, with the aim of studying what is needed, and what the hospital should do, and of presenting a report thereon to the responsible authorities of the hospital.

There are certain forms of preventive work of a clinical nature which have been tested out at a number of hospitals and proven so successful that the committee believes they should be called to attention at this time.

1. The hospital can cooperate with the medical inspection of school children. In all cities and towns where this inspection has been established a large number of diseases and correctible physical defects are found among children whose parents cannot pay for the medical services needed. Much of this work requires the services of a specialist. It is largely with ambulatory cases. The hospital, through its out-patient department, and to some extent through the wards, can perform an invaluable service for the children of its community. This is an additional reason why the out-patient department is needed in hospitals in both large and small communities.

2. The hospital can maintain a dental clinic for school children. Ninety percent or more of school children need dental service, the supply of which is everywhere inadequate. A dental clinic can do an enormous amount of good in prophylactic as well as remedial work. Nominal fees can be charged to most patients which will cover the cost of the materials used.

3. An out-patient clinic for eye diseases and for providing eye-glasses is another general need. The work of such a clinic is again largely with children of school age. To make the clinic effective, the hospital should retain control of the optician's part of the work.

4. Remarkable results have been accomplished in some hospitals in orthopedic work through classes for children in corrective gymnastics. The hospitals in which orthopedic service is established should look into the valuable curative and preventive measures of this work. In connection with any orthopedic service, the establishment of a shop for making braces and other orthopedic appliances should be considered. Such a shop can be placed at the service of the community in general, as well as the hospital's own medical staff, and can be made self-supporting.

5. A hospital treating in wards or as out-patients any number of babies should establish a preventive clinic at which mothers receive advice and instruction in the feeding and care of their babies, and at which milk is provided for those who cannot be breast-fed. Such preventive clinics are now successfully maintained in many cities and towns, and a national association for the study and prevention of infant mortality has been organized for the purpose of assisting individuals or institutions who desire to extend such work.

6. Finally, we should bear in mind the use of literature as a means of educational and preventive work along health lines. The hospital may well be a center from which will be distributed printed information concerning diseases, such as tuberculosis, typhoid, or instructing in hygiene. A large number of leaflets and pamphlets have been prepared by public and private agencies for such use. It should, however, be borne in mind that merely to hand out literature does not usually amount to much practical service.

In conclusion, the committee on preventive work wishes to emphasize the importance of this subject. Public interest and financial support is flowing so markedly in the direction of prevention that the hospitals may wisely give serious attention to their responsibilities in this matter.

OLD BLOCKLEY UNDER THE KNIFE.

Only a Capital Operation by a Trained Specialist Will Cure The Ills From Which the Famous Institution Is Suffering.

BY RICHARD WATERMAN, SECRETARY OF THE COMMITTEE ON HOSPITAL EFFICIENCY OF PHILADELPHIA.

The recent discussion of "Plans for the New Philadelphia General Hospital" before the members of the City Club of Philadelphia and their guests, made it perfectly clear that nothing short of a capital operation will accomplish the purpose which was defined by all of the speakers, including Director Richard H. Harte of the Department of Public Health and Charities, Commissioner S. S. Goldwater of the Department of Health of New York City, Dr. David Riesman, Dr. W. Duffield Robinson, Dr. D. J. McCarthy, and Dr. Joseph S. Neff.

In his address, Dr. Harte referred to his plans for the new Philadelphia General Hospital as "a half-baked proposition" because he was conscious that he has had neither the time nor the special training that would enable him to make the plans himself. He is not a hospital administrator, nor a hospital consultant, nor a hospital architect—he is an eminent surgeon. In planning the Philadelphia General Hospital he must have the assistance of someone whose training has fitted him to show the people of Philadelphia how they can get full value for the $6,000,000 which they will expend for the construction and equipment of the new hospital buildings; and how they can get full value in the future for the large sum—probably $750,000 a year—which they will expend for maintenance. The number of men in the United States who are competent to do this could probably be counted on the fingers of one hand, or surely on the fingers of both.

The city should employ a competent hospital consultant to make a careful study of the entire situation and advise Director Harte and city councils in regard to certain fundamental questions.

Should the new hospital provide chiefly for chronic cases, as does the Philadelphia General Hospital at the present time, or should it receive only acute cases and send chronic patients to other institutions erected especially for that purpose? Is it wise to erect a hospital having a capacity of two thousand beds, or should this capacity be divided between two or more institutions located in different parts of the city? Is it possible to make the administration of a two-thousand-bed institution efficient? Is the site that has been chosen so located that each of the great medical schools in Philadelphia will have the same opportunity to help make the new Blockley a great teaching hospital that will be an important factor in restoring Philadelphia to her former position as the leading medical center in the United States? Is the proposed plan for the arrangement of the building so carefully considered that there will be no unnecessary waste of labor, of materials, or of money, in the operation of the hospital?

These and many other questions are of fundamental importance in the development of the plans for the new hospital buildings. They must be settled before it will be possible for the architect to commence his work. They cannot be settled by the expression of an off-hand opinion, but will require months of study by the most competent expert whose services can be obtained.

It might cost the city of Philadelphia $20,000 or $30,000 to employ a hospital consultant to supervise the preparation of the new hospital plans, but in the opinion of the best experts in the country it is certain that the expenditure of this money will reduce the annual cost of maintaining the hospital by at least four or five times this amount.

The plan of operation for the new institution should be worked out in advance with great care, in order to determine how much space will be needed for each department; how this space should be distributed; and what should be the relative location of the various departments. Then the architect should be asked to incorporate this plan of operation in an architectural plan for the new buildings. This is the method by which the people of Philadelphia can be assured of obtaining the best possible results in return for the large amount of money which they will expend every year for generations to come in maintaining the new institution after it is completed.

The great work that Dr. Harte can do is to secure the adoption by councils of the plans when they are made. He said at the City Club meeting that there has been no political interference with the conduct of the Department of Health under his administration; and that no reasonable request of his has been refused by councils. This situation constitutes Dr. Harte's great opportunity, since political interference is the rock on which nearly every plan heretofore proposed in this country for a great municipal hospital has been irretrievably wrecked.

Dr. Harte has visited the new Cincinnati General Hospital and he knows that as a result of political interference that hospital has cost for construction and equipment nearly $7,000 a bed—nearly three times as much as it should have cost—and that according to the best expert opinion it will cost each year for maintenance from 50 to 60 percent more than is necessary. He has visited the new buildings of the Cook County Hospital in Chicago, which have a capacity of one thousand beds, and he knows that in that institution politics has been allowed to interfere so seriously that, although the commissioners employed one of the best hospital consultants in the United States, they have rejected his advice at so many points that the new hospital already ranks as a $4,000,000 monument to inefficiency. Dr. Harte is anxious to avoid having a similar experience in Philadelphia.

If a physician finds that one of his patients whom he is treating for some of the ordinary ills of life develops a complication that requires surgical interference, the first thing he does is to call in Dr. Harte or some other eminent specialist who is skilled in the diagnosis and treatment of surgical difficulties. He feels that he is entitled to the best expert assistance in such an emergency, and that the family of the patient will expect him to obtain it.

It is equally true that Director Harte and the members of councils are entitled to the best expert assistance in the diagnosis and treatment of the ills from which Blockley is suffering at the present time; and that the family—i. e., the people of Philadelphia—will expect them to obtain it.

Dr. Charles P. Bancroft, for thirty-eight years superintendent of the state hospital for the insane, at Concord, N. H., retired Dec. 31. Dr. Bancroft succeeded his father, who held the position nineteen years. Dr. Charles H. Dolloff, an assistant at the hospital, was chosen to fill the vacancy temporarily. It is reported that Dr. Edgar O. Crossman, of Lisbon, formerly internal revenue collector at Portsmouth, will be named as permanent superintendent.

Dr. L. R. Sellers, formerly second assistant physician at the Osawatomie (Kas.) State Hospital, is now in charge of the Kansas State Hospital at Larned, Dr. B. F. Hawks having resigned as superintendent of the Larned institution.

CURRENT HOSPITAL LITERATURE

Albert Allemann, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

The Need of More State Hospitals for the Insane. J. Allen Jackson. N. York M. J. (etc.), New York, 1914, C., 1013.

The author has made a study of conditions existing in the southeastern district of Pennsylvania. The State Hospital at Norristown and the Philadelphia Hospital for the Insane are selected as examples of institutions caring for patients far in excess of their capacity.

The Reserve Hospital in Siegen (Das Reserve-Lazarett in Siegen). Stalz, Archit. Gesundheit, Leipzig, 1914, XXXIX, No. 21.

How a suitable building may be changed, if necessity demands it, in a practical manner into a hospital is shown by the temporary military hospital in Siegen. In this city a great concert hall was converted into a military hospital under the direction of Dr. Hensgen. The beds, ninety-four in number, are placed in the hall and on the gallery. The stage, which is separated from the hall by an iron curtain, is used for storing the uniforms and other belongings of the soldiers. In the second story are the rooms for the nurses and the operation room. In the basement, water closets and bathing rooms have been built in. The basement contains also the heating plant, store-rooms, etc.

How May the Best Results Be Obtained in Case of Incorrigible Consumptives Where There Are no Hospitals? Am. J. Pub. Health, 1914, IV, No. 12.

This is a discussion opened by Dr. E. O. Otis, of Boston, in which it was contended that the consumptive does not become a menace to society if he is careful in disposing of his sputum. A great deal can be done with the incorrigible consumptive by careful supervision, education, and training. The problem of the incorrigible consumptive, whether in the small town or the city, can only be definitely solved by a special law empowering the board of health to remove the offending person to a consumptive hospital, and by providing such a hospital for cases of this class. Furthermore, the public must be taught that a consumptive who properly disposes of his sputum is not a menace.

The Hospitalization of the Tuberculous (Per la spedalizzazione die tubercolosi). V. Luigioni. Ospedale Maggiore, Milano, 1914, II, No. 8.

In 1907 there were in Italy only twelve special hospitals for tuberculous patients. In Milan patients with pulmonary tuberculosis were placed, as late as 1911, together with the other patients in the Ospedale Maggoire. But, as the danger of infection for the other patients and the nurses made itself felt more and more, the board of hospitals of the city of Milan decided that patients with pulmonary tuberculosis cannot be received any longer at the Ospedale Maggiore. A division for tuberculosis patients was established at the branch hospital at Cernusco, and a new building for tuberculous patients of the city of Milano was erected at the Ciceri branch hospital.

Hoog-Blaricum, the Amsterdam Sanatorium for Children. F. L. Deterding. Het Zuikenhuis, Amsterdam, 1914, V, No. 8.

This institution was established by the city of Amsterdam and opened in 1912. It is situated on a small elevation, in very healthful and beautiful surroundings, about 16 miles southeast of Amsterdam. The sanatorium is built in the old Dutch style. The buildings contain only one story, and are covered with enormously high and steep roofs. The sanatorium consists of one large rectangular central building. From each of the four corners extends a large wing obliquely, so that the ground plan presents the picture of two Y's whose stems meet and form the central building (><). The institution is surrounded by beautiful parks and woodlands.

The Number of Physicians and Nurses in the Public and Private Hospitals for Mental Diseases as Compared With the Number of Patients (Ueber das numerische Verhältnis der Aerzte und Pflegepersonen in den öffentlichen und privaten Heil- und Pflegeanstalten für Geisteskranke zur Anzahl der Kranken). Dr. H. Schloss. Allgem. Zeitschr. f. Psychiat., Berlin, 1914, LXXI, No. 6.

The author has made an inquiry among the hospitals for mental diseases in the various countries regarding the number of physicians and nurses as compared with the number of patients and has obtained the following results: In German institutions there are 112 patients to every physician, in Austria 115, in Switzerland 116, in Italy 124, in France 225, in the United States 275, in Great Britain 278. As to the number of nurses the results are as follows: In Germany there are 5.91 patients to each nurse, in Austria 6.46, in Switzerland 6.82, in Great Britain 9.48 and in France 10.22. The relative number of nurses in American institutions could not be ascertained.

A Simple System of Ventilation (Einfache Lüftung). R. Schippel. Heilanstalt, Leipzig, 1914, IX, No. 21.

Pressure ventilation is a system of aeration that has stood the test. It consists of a system of tubes, in which the air is forced into the rooms by a ventilator mechanically set in motion. As in this system apparatus can be inserted for cooling or heating the steadily streaming air, its hygienic results are very satisfactory. The chief reason why this system has not been more frequently introduced in hospitals is the fact that the mechanical power was lacking to set the ventilator in motion. This want has now been filled by the general introduction of electricity. In a large hospital of several stories, the ventilation apparatus is usually placed in the upper part of the building, and, if possible, in a well lighted space. The apparatus consists of a ventilator set in motion by an electromotor and provided with a mixing valve. According to the adjustment of the valve the ventilator draws fresh air from the tube coming from above, which is provided with a cooling apparatus, or from the tube coming from below, which is provided with a heating apparatus. The air, whose temperature is regulated at about 15° C., flows through a dampening space, in which, according to necessity, humidity is added to or withdrawn from the streaming air. A slight escape of air behind the dampening apparatus indicates on a polymeter the quality of the passing air. In clean metal tubes the air flows to the various rooms. On account of the rapid downward flow of

the air it is impossible for dirt to collect in the tubes. The escape of the air from the rooms takes place as usual through valves in the windows or through air shafts. The article is accompanied by two diagrams.

Notes on the Organization and Management of Military Hospitals in the Home Territory (Einiges über die Organisation und den Betrieb der Kriegslazarette im Heimatgebiet). Heilanstalt, Leipzig, 1914, IX, No. 21.

After mobilization the existing military hospitals are called "reserve hospitals." As these hospitals are not sufficient for the great demands in time of war, the administration of each army corps has already selected in peace time suitable buildings to be used as reserve hospitals. These reserve hospitals are under the direction of a chief surgeon, or, if such an officer is not available, under a civilian physician. As the soldiers of the hospital corps are needed in the field, civilian nurses are employed. If several reserve hospitals are established in one city, one director takes charge of all to secure a uniform management. Besides the reserve hospitals the existing association hospitals and sanatoriums also receive wounded soldiers, but such hospitals must have not less than twenty beds. These are under the management of a medical director who stands under the chief surgeon of the respective army corps.

Vera Cruz Hospital and Red Cross Relief Work. The Survey, November 9, 1914.

With the withdrawal of American military forces from Vera Cruz, Mr. Charles Jenkinson, director of the Atlantic Division of the American Red Cross, finds the opportunity to review some of the social consequences of the occupation to the native population of about 35,000 people. In the *Survey* of November 9 he shows that the American Red Cross maintained headquarters and carried on the relief work from ten days after occupation of the port to September 2; that, besides the care of families left destitute by the panic-stricken federal soldiers, the Mexican dead and wounded left behind by the federal army as they evacuated the fort became the care of the American military and naval hospitals. The American soldiers were called on to bury the dead. The Mexican Neutral White Cross, a private and unofficial relief organization, cared for a few of the wounded Mexican soldiers in its small hospital relief station, one that had been maintained for some time in Vera Cruz. Private hospitals cared for a few more. Some Spaniards wounded during American occupation were cared for by the American military hospital and by a Spanish benevolent organization. Our own soldiers were transferred promptly to the hospital ship Solace and to naval hospitals in the United States.

The Physician's Liability for Negligence of the Hospital Nurse. Med. Rec., N. Y., 1915, LXXXVII, No. 1.

Action was brought against the plaintiff's family physician, by whose advice she went to a public hospital for a surgical operation. After the operation she was burned by a hot-water bottle that had been left by a hospital nurse in the bed in which she was placed.

It appeared from the testimony that while the defendant was a member of the hospital staff, and had recommended the hospital and had agreed to perform the operation for a stipulated sum, the hospital expenses were to be paid by the plaintiff. That she was operated upon by the chief hospital surgeon, assisted by the defendant; that the defendant followed the nurses and the etherizer into the recovery room, and stood near the foot of the bed when the plaintiff was placed in it; that in the operating room the nurses were in charge of the surgeons, but in the recovery room they were under direct, immediate, and exclusive control of the directress, which was a general rule in hospitals. It was held that the injury was caused by the negligence of a hospital nurse for whose service the plaintiff paid the hospital and whose work the defendant would not have been permitted to supervise and for whose negligence he was not responsible. Stewart vs. Manasses, Pennsylvania Supreme Court, 90 Atl. 574.

St. Agnes Hospital. H. A. Royster, J. Nat. Med. Ass., Nashville, 1914, VI, 221.

St. Agnes Hospital, a department of the St. Augustine school was originally intended to give instruction to young women nurses. From such a beginning the hospital has developed into a fifty-bed institution for colored patients. The building was constructed from stone quarried on the premises, and the structure was erected by students of the masonry class of the St. Augustine school. The hospital's success is the result of the devotion and zeal of its founders and the development of an efficient system under a restricted staff. The author reaches two conclusions: that the separation of services into three main divisions with a general supervision, but with personal responsibility, produces marked efficiency with a minimum outlay; and further that negro patients are afforded the maximum of comfort and results in hospitals intended exclusively for themselves, and conducted under competent and reliable management. The former aversion of the negro to surgical treatment has almost disappeared. With the spread of the hospital idea in the community the horror of going to such institutions has lessened remarkably, and patients are applying earlier for surgical relief. As a consequence the mortality rate has been greatly lowered. The author takes issue with the claim that the negro is immune from diseases common to the white race, and concludes an interesting paper with a table of operations at St. Agnes Hospital.

Relation of Physical Therapy to the Hospital Patient. W. L. Bierring, J. Am. M. Assn., Chicago, Nov. 14, 1914.

The author contends that only a small proportion of patients entering a hospital will prove to need physical methods of treatment; the hospital should be equipped and prepared to meet the demands of this kind. That the best forms of physical therapy are not always the most elaborate and costly; often valuable work can be done with improvised apparatus when utilized with good sense. With an annual increase averaging 300 patients, and the annual admissions exceeding 1,700 patients, the necessity arises for fifty percent of these admissions to be actually under treatment in already overcrowded institutions. Authorities in scientific treatment of mental diseases realize the folly of attempting the best method of treatment for the patent acutely ill mentally, when necessity places the acute cases side by side with those of the chronic type. This class of patients can receive better treatment in a psychopathic hospital. There can be no more crying need than that for state psychopathic hospitals. The treatment of the mild, chronic insane by the colony plan becomes one of the most interesting fields in the subject of psychiatry. Such a plan embraces an economical method of giving the patient exercise, freedom, and good physical health, making him at the same time partially self-supporting. A most satisfactory, efficient, and economical plan would be to establish colonies or villages near, and under the supervision of, each state hospital. To overcome conditions in Pennsylvania the state should assume entire charge of its insane. The scope of the work of the committee on lunacy should be broadened and the committee should be vested

with more authority. Plans for the construction of new hospitals should be standard and uniform. The erection of an additional hospital in each of the Southeastern and Southwestern districts, the establishment of psychopathic hospitals with out-patient departments, and laboratories and farm colonies available for chronic cases, are to be included in a program for state care of the insane.

Tuberculosis and Sanatoriums for the People; Mortality from Tuberculosis in France; Distant Results of the German, Swiss and French Sanatoriums for the People (Tuberculose et sanatoriums populaires; mortalité par tuberculose en France; résultats éloignés des sanatoriums populaires allemands, suisses et français). Dr. G. Artaud. Archives gén. de médecine, Paris, 1914, XCIII, July number.

France has only ten tuberculosis sanatoriums for the people with 908 beds in all, while Switzerland with a ten times smaller population possesses twelve such institutions with 923 beds, and Germany, the pioneer country for the sanatorium treatment of tuberculosis, has 104 tuberculosis sanatoriums with 12,146 beds. In 1907 32,073 patients were treated in the German sanatoriums; of these 26,287 left the institutions and were able to go to work. In 1912 46 percent of this number were still able to provide for themselves and their families.

The author considers it the duty of the state to take up the struggle against tuberculosis and to establish in each district a tuberculosis dispensary; and in each of the 85 departments of France to establish a sanatorium for the people. Not only indigent patients should be received in these institutions, but needy patients of the middle classes should also be assisted, as is the case in Germany and Switzerland. To obtain lasting results the average duration of a cure should be fixed at six months. At the present time 50 to 75 percent of all patients can be cured in about six months in a well managed sanatorium if they are treated as soon as the first signs of tuberculosis appear. With 85 sanatoriums France will be able to treat 20,000 patients and save at least 10,000 human lives every year.

The Social Position of Physicians in Hospitals for the Insane (Die soziale Stellung des Anstaltsarztes). Dr. van Deventer. Allgem. Zeitschr. f. Psychiat., Berlin, 1914, LXXI, No. 6.

The conception of mental disease has in modern times been greatly widened and enlarged. It does not only comprise the insane, but also the psychopathic, the senile, the feeble-minded children, the idiots, the epileptics, the alcoholics, etc. A great field has thus been opened up for the psychiatrist outside the hospital. Psychiatrists who once used to belong to the hospital staff of institutions for the insane now consider the hospital frequently as a stepping stone, as a practical school for specialists in this field. Their number grows constantly and the hospital service loses thus many excellent men. The field of the hospital physician has also been greatly enlarged. The extensive special knowledge which he must possess, has so much increased that a division of labor has become necessary. The medical director must be a many-sided man, he must possess the talent of organization, he must be a clinician, an expert in forensic psychiatry, an administrator, a sociologist, an economist, a pedagogue, a specialist in the field of hospital construction, an authority in social-medical questions, as in combating social evils, alcoholism, venereal diseases, tuberculosis, etc.

The medical director and his assistants are not unfrequently criticized and attacked by the press and the mass of the people. Prejudices against hospitals for mental diseases are still deeply rooted in the people. Stories are told of ill treatment, of unlawful deprivation of liberty, of tyrannical conduct, of cruelty, that have not the least basis of truth in them. It is frequently claimed that the psychiatrist has the power to declare any person sound or insane and that many persons are arbitrarily detained in the hospital without any cause. In cases of accidents, suicide, homicide, public opinion almost always throws the blame on the hospital physicians. The work of the hospital physician is full of trouble, responsibility, and danger, and many a psychiatrist has fallen a victim to his duty. The only remedy for these conditions is to enlighten the press on the true status of psychiatric science, for the press is the only means to influence the people and to remove from them the deep-rooted prejudices against public and private hospitals for mental diseases.

The Evacuation Hospital. Major Clyde S. Ford. Survey, N. Y., 1915, 369.

The author, who has been attached to an evacuation hospital during the Balkan wars, furnishes an article upon hospital work and the care of the wounded. The evacuation hospital he regards as the most important unit in sanitary service at the front. It is there that substantial care and surgical service for essential operations must be provided to prepare patients for transportation to base hospitals, where their fate may be determined. At the base hospital, the skilful volunteer surgeons and nurses, untrained in military service, may find their most useful employment. The so-called and oft-heralded "front" is the lure of nurse and soldier; the spirit of adventure tempered by the love of humanity in the one, and the love of country in the other; but its inspiration the author believes leads to failure of the nurse's mission, though it gives strength to the soldier's battle. The American Red Cross Society is not prepared to render any organized assistance to the army in time of war; and the lessons of the Balkan wars, as well as others that come daily to us from the battlefields of Europe, teach that it is service, not sentiment, that ameliorates the condition of the wounded in time of war.

The manner in which volunteer aid can be of most expeditious service to the wounded in war is to be learned from the preparations that all European Red Cross Societies have made, viz.:

1. General organization for the care of the wounded after they have been passed back from the zone of operations by the army sanitary department. This division is arranged with the sanitary department under the direction of the War Department.

2. Accumulation of large sums of capital which cannot be expended unless the country is at war. Only the income is available for administration. Special subscriptions only are applied to general relief wrok.

3. Organization of various aid units, such as field hospitals, base hospitals, field rest stations, railroad rest stations, hospital trains, hospital ships, transport columns, organization for distribution of patients, information bureaus and the establishment of depots of supplies.

4. Accumulation of materiai for the equipment of their various units.

5. Training of individuals for their special duties.

That there is scarcely any limit to the work which may be done by voluntary aid societies for relief of the wounded in time of war, but efficient results can only be obtained by preparation and organization in time of peace and hours of reason.

Bellevue Hospital, New York City, now has five women interns.

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DEPARTMENT of NURSING

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Women on Hospital Boards.

A great deal is being written about the presence of women on the managing boards of hospitals, the inference being that they occupy these positions in company with other members who are men. The advantages of their presence are many, as might be proved if one were to cite the number of successful hospitals being managed entirely by women today; but there are disadvantages, as hospital workers who have had experience in the matter will agree.

For instance, it is a distinct disadvantage to a hospital to have on its board of managers those who pay more attention to the placing and position of rugs on the floor than to the fact that there is a shortage of blankets for the patients when the nights are cold. It is a distinct disadvantage, also, to the hospital to have a visitor question and make much ado concerning a tub of very dark water which she saw being used in the laundry, said water proving to be only the bluing water.

But these are exceptions and may be exaggerated exceptions to the rule that it is a good plan to have women on the boards of managers of hospitals.

It has sometimes been thought wise to secure the help and advice of women by putting them on training school committees, or visiting committees, or in certain other places where their powers are limited. Generally they prove their usefulness in these places and their willingness to render service without notice or other emolument, thus setting an example that might well be emulated by all classes of public workers.

It is a distinct advantage to the hospital inmates to come in contact with these women, who are usually selected from the best in the community, representing, as they do, the class which has leisure to devote to those purposes in which it is interested. They bring to their work a large sympathy that is always felt when their visits to the hospital are made. They are apt to acquaint themselves with details of the work, giving time in greater measure than most men are willing or able to give. It is this very matter of detail and insistent adherence to it that may make the woman visitor something of a bore and a hindrance to the over-busy and overworked administrator; nevertheless something may be gained from even this particular visitor if she can be met by a receptive mind and a spirit of cooperation.

As a rule these women are a refined body and the influence which they exert acts and reacts upon the patients to their benefit, as well as upon the nurses and other workers to their refining. It has very often been remarked by heads of hospitals where the woman's influence is unknown, that there is a void in the instruction and in the finished product of the training school that could have been filled only by a woman's board.

A woman, member of a board of managers of a hospital in Scotland, when asked if women were acceptable to the other members of the board of managers who were men, replied, "Our men long ago discovered that they have not such a monopoly of the knowledge and wisdom concerning household affairs and the management of the sick as to do away with the services of women on their board."

Human nature and the needs of humanity are not especially different in America and women are here found to be most useful on boards of management of hospitals.

FASHION—THE MOLOCH OF WOMAN'S HEALTH, COMFORT, AND HAPPINESS.

Sensitive Nature of Woman Violated by the God Fashion—Men Are Left to Nature—Corsets, Collars, and Shoes Woman's Undoing—Doctors and Nurses Should Help Mold Proper Styles.

BY HOWARD MOORE, M. D., F. A. C. S.,
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(Continued from January, 1915, issue.)

First of all, a corset should be light in weight. Whether a corset keeps its shape depends on the material and the manner of construction rather than on the weight of the material used. It should be low, in order to support the abdomen from below upwards; it should fit well over the pelvis, in order that the support of the abdomen may come upon the pelvis rather than the spine, and in order that the support of the skirts may fall on the pelvis instead of the waist. The waist should be larger than is now the average, and the corset should be cut low in order that there may be far greater freedom from constriction and far greater freedom in motion of the ribs in respiration. It should be so cut as not to change the physiological curves of the spine.

Now, of course, it is perfectly obvious that the benefit will be lost if, after giving the waist plenty of circumference in the corset, the waist bands of the skirts are going to be made tighter. I have frequently seen a corset fit fairly well, giving plenty of freedom at the waist, constricted from one to two inches by the skirt bands which were fastened about it. This is actually far worse than having the corset made two or three inches smaller about the waist, for, while in the latter case there would be as much constriction, the corset would fit, and the pressure be more widely distributed. The skirts should be so fitted that they are supported entirely upon the pelvis, the waist band being made just tight enough to fit and not constrict. The means of supporting the stockings is another important thing. There should always be side or back supports in addition to those in front. Supporting the stockings by the front supports alone, whether they are attached to the corset or a belt, hangs a constant drag on the small of the back, a portion of woman's anatomy which oftentimes is hopelessly unfit to stand any prolonged strain, even though it may be exceedingly slight. The side supports tend to balance those in front and bring the entire support upon the pelvis.

The manner of lacing the corset is worth a little consideration. If a corset is laced from top to bottom with the same lacing, it is obvious that when the wearer bends her body laterally the top of the lacing will be separated, and because of this fact the waist will be pulled in by just as much as the top is separated. This defect may be remedied by using two, or in very long corsets three,

different lacings. Where only two are required, the lower one should lace about three-fifths and the upper the other two-fifths. When three are used, each should be given about a third of the lacing. The lacing should be tied, but loosely enough to permit of the corset being put on without untying.

But, in spite of the best of suggestions and the best of corsets, there will surely be a tendency toward weakening the natural supports, the abdominal muscles, and a diminishing ability of the internal viscera to perform their functions whenever the corset is worn. It is usually easier to prevent than to remedy, and nine out of ten women would

Fig. 13.

never need a corset either as a support or as a means of producing a better effect as regards their figure or their dress, provided they had from girlhood, by means of exercise, trained their abdominal muscles to act as a corset, and they would have enjoyed life far more. Furthermore, they would have been able, had it been necessary for their peace of mind, to have accomplished by exercises many of the changes of form demanded by the vagaries of Fashion, for it is perfectly simple to reduce or enlarge hips or waists by exercise.

In almost every woman who has worn the corset, unless she has taken care by means of exercises to prevent it, there will be found a varying degree of relaxation of the trunk muscles. This may be entirely overcome and the muscles may be kept in good tone by means of simple daily gymnastic exercises. Fig. 13 represents a young woman who had led an active athletic life, and who was physically fit, with the exception of her abdominal muscle, which did not develop in proportion to the muscles elsewhere in the body because of always having worn a corset. Stomach ptosis resulted from the relaxation of the abdominal muscle, with its consequent symptoms, due to the serious digestive disturbances. The stomach sagged so that its fundus was in the pelvis and had become very much dilated. The symptoms were relieved artificially by supporting the stomach with the surgical corset (Fig. 14). Proper gymnastics toned up the muscle of the abdominal wall so that eventually the normal support was given to the stomach, and health and increased vigor was the result. There are a number of general exercises, such as moderately long walks, skating, and especially swimming, that are of great service in maintaining tone in the trunk muscles, and they have the additional benefit of performance out of doors.

Another important point of posture worthy of emphasis is the fact that the body is constructed on a plumb line, so to speak, and, if we allow any part of the body to become out of plumb, we must inevitably find that this will be compensated by variation in another part. Inasmuch as there are practically no abnormal conditions in the feet of the barefooted people or those who wear loose, flexible coverings, such as moccasins and sandals, it is strongly suggestive, to say the least, that the wearing of shoes has something to do with causing the many deformities and disabilities which are found in the feet of shoewearing people, and there are proofs that this is so. The wonder is that there are so few of these disabilities when it is understood just what the shoe actually does.

To make it easier for one to understand the effects of the modern shoe, a brief description of the wonderful mechanism and function of the feet is given. The foot must serve a twofold function—a passive support of the weight of the body and a lever to raise and propel it. For the proper performance of these functions, the foot is so constructed as to allow elasticity under pressure, and an alternation of attitudes under strain that protect it from injury. That is the key to the entire situation, because the average shoe (especially as worn by women) allows of very little elasticity or change of attitude.

A description of the arches of the foot will help to make clear the reasons for the effect of the shoe (Fig. 15). The transverse arch is that formed by the metatarsal bones, and of this the anterior part or so-called anterior

Fig. 14.

arch will be mentioned, as it is this part which most concerns us. It consists of the distal ends of the metatarsals. When the foot is used as a passive support, it is a patent arch, as the weight is borne by the first and fifth heads, those intervening being above their plane. During walking, as the weight is borne on the ball of the foot, this arch is depressed, but becomes patent again when the weight is passed forward to the toes. Thus there is provided a spring effect which relieves the pressure on the skin, blood vessels, nerves, and other structures under the arch. When the toes are called on to bear the weight and supply the force that propels the body forward, they spread

Fig. 15.

apart, and this spreading is one feature which tends to restore the anterior arch.

The longitudinal arch may be divided, for purposes of description, into two parts—an outer, formed by the os calcis, cuboid, and the two outer metatarsals, and an inner, formed by the os calcis, the astragalus, the scaphoid, the cuneiforms, and the three inner metatarsals. The former is low, depresses under weight, so that the outer border of the foot rests on the ground, is more strongly braced, and therefore is better adapted to weight-bearing than is the higher and more flexible inner part.

Considered as a whole, the long arch of the foot is unsymmetrical (Fig. 16). Its posterior leg is short, descends sharply, and is stable. It is therefore the weight-bearing or supporting pillar. The anterior leg is long and flexible, not adapted to weight-bearing, but for supplying balance, elasticity, and spring.

When the foot is used as a passive support, the muscles play but a small part in maintaining its posture. Owing to the elasticity of the ligaments, motions are allowed in the joints, which change the contour of the foot markedly from what is true in activity; the outward curve of the inner border of the foot is obliterated, and the arch becomes slightly depressed (Fig. 17*a*). On the other hand, used actively, the foot assumes postures directly opposed to these; the muscles are engaged, the arch is maintained, the inner border of the foot is curved outward. During walking the foot serves as a lever. The distal heads of

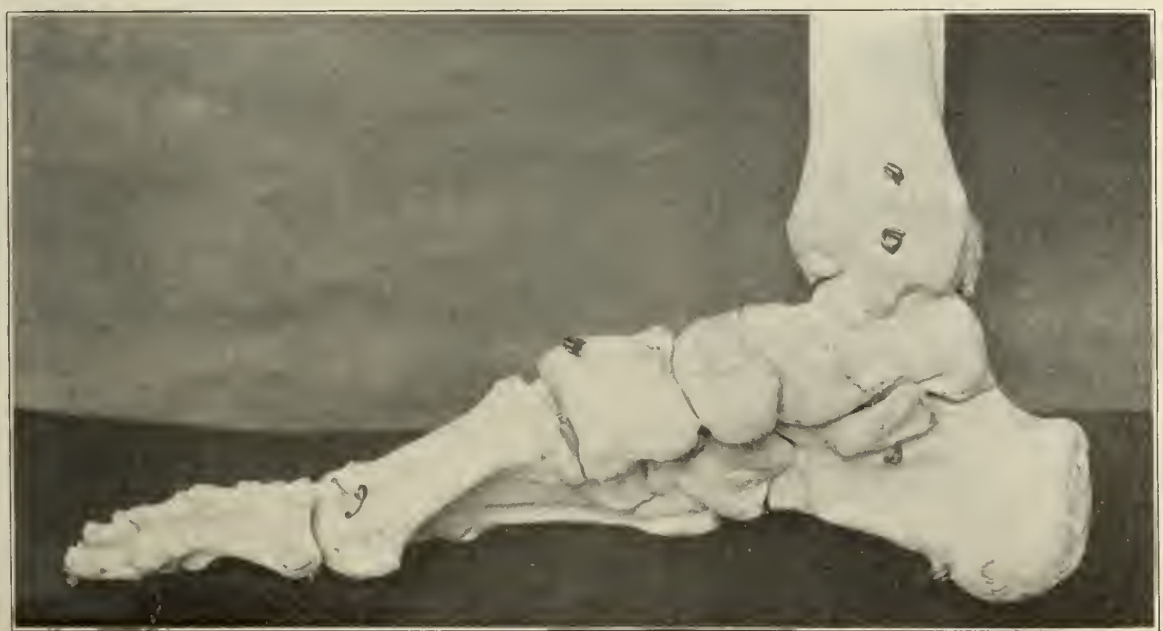


Fig. 16.

Fig. 17.

the metatarsals are the fulcrum and the calf muscles supply the power. The postures assumed are briefly these: the long axis of the foot is approximately parallel to the direction of locomotion; the weight is borne momentarily upon the heel, then the outer border of the foot, and then the heads of the metatarsals and toes as the heel is raised. Because of the difference in length of the metatarsals, there must be a turning outward of the leg, with relation to the fore foot, if the weight is to be distributed equally over the breadth of the fulcrum; therefore at the end of the step the foot appears "toed in" (Fig. 17*b*).

Can one imagine a foot performing its functions freely and fully, encased in the shoes commonly worn? A number of fair samples are shown in Fig. 18. This collection represents all the models a certain company had to offer.

Fig. 18.

It will be noted that there is not a foot-shaped shoe in the entire lot. The elevation of the heel throws the center of gravity forward, so that a greater part of the weight of the body must be supported by the anterior leg of the arch, shifting it from the posterior leg designed and meant to bear it. This means strain in the ankle and all through the foot. Added to this is the strain caused by the outer border of the foot being distorted by the curved

Fig. 19.

shanks of the shoes. The bearing surface of the heels is so small, as a rule, that the ankles are constantly being turned.

The narrow-pointed toe so constricts the foot at the anterior arch that there is no possible chance for the spring effect, and the toes are given no chance to spread, aid in restoring the arch, and aid in the push-off. This is all in addition to the actual production of deformity, such as hallux valgus (Fig. 19) and bunions, hammer toes, valgus, etc.; out-toeing of the feet is practically unavoidable, with its element of strain, not to speak of its awkwardness. The constant strain and weakness resulting

Fig. 20.

from this lessened flexibility and perversion of function, must inevitably lead to abnormal conditions, such as flat feet, pronated feet, anterior metatarsalgia, etc. In Fig. 20 are shown three models of dressy shoes, the pumps, the French-heeled slipper, also a foot-shaped, anatomical shoe, and a physiological shoe. There also appears a dancing slipper. These shoes were all fitted to the same foot, a tracing of which is also shown in the illustration.

As was the case with the corset, the reason the shoes produce weakness and deformity is they alter contour or posture, and limit or restrict the normal action of the structures incased in them. So the remedy, first of all, is to get a shoe that is the shape of the foot, or at least in which the foot can be placed without any distortion or pressure (Fig. 21), and, second, by means of gymnastics and tonic measures once or twice a day to supply the structures of the feet the exercises which they must have, and which the shoes prevent, and in training oneself to stand and walk properly.

As to the choice of shoes, there are a number of points of practical value and worthy of consideration. In the first place, a low shoe is preferable to a high one, and tan leather to black leather from the point of view of hygiene.

Fig. 21.

The benefit from a high shoe is entirely in the protection it gives to the ankle from cold or wet. The support which counts in a shoe is that which is under the foot rather than what is around the ankle, and this support depends entirely on the shape and size of the bearing surface of the shoe, especially the heel. The advantage of tan leather is in its increased porosity and lightness.

A shoe should, of course, be foot-shaped or nearly so; in other words, one which does not materially alter the form of the foot. There are a number of very satisfactory foot-shaped shoes on the market; so many, in fact, that there can be no excuse for not wearing them. As to the choice between a stiff and flexible shank shoe (Fig. 22), there is a difference of opinion among orthopedic surgeons as well as shoe men. The majority, however, of those who have carefully watched the effect of shoes have come to the following conclusions: the flexible shank shoe —in other words, the physiological shoe—is the shoe which all normal feet should wear, the shoe which, if worn, will probably keep the feet normal; on the other hand, the stiff shank shoe, or the anatomical shoe, should be worn by strained or most deformed feet for the reason that a flat foot is nothing more or less than a strained foot. To put this foot into a shoe which allowed increased flexibility would be like having a patient with a sprained ankle go barefooted. Such a foot should be supported and its flexibility somewhat restricted until such time as the acute effects of the strain are relieved, and the foot has been toned up and strengthened by means of exercises and other measures to maintain its normal posture and perform its function normally. It may then be put into the flexible shank shoe, and will probably continue to remain normal. If the foot has become weakened, or for any other cause there are symptoms which demand attention, a surgeon should be consulted. Time and money will usually be saved.

Because so many things may happen, it is impossible to outline, in general, measures to cover all cases; feet are as varied as faces, and the same shoe and the same measures of treatment obviously will not fit every case. There are, however, a few general measures which will tend to prevent any trouble with the feet. In the first place, habitually using the feet properly, both when standing and when walking, and by this is meant the slight intoeing; secondly, the wearing of a shoe which is foot-shaped, whether with a stiff or flexible shank; and, third, keeping the feet in good tone by daily plunging them alternately in hot and cold water.

Fig. 22.

In conclusion, it is perhaps well to emphasize that the human body is nothing more or less than a machine of extremely delicate adjustment, and one from which a greater variety is expected in the nature of the work to be performed than would be considered possible of any other conceivable mechanism. Every individual is represented by a certain potential. If the individual is to deliver to the world his maximum possibilities, it is essential to have the machine in its best possible working order. This can be only when it is as Nature constructed it. Any variation in its form, posture, or manner of use means either friction, strain, or, in other words, waste, and the output must be materially lessened.

Express Training.

To the Editor of the British Journal of Nursing: Dear Madam—May I, as a matron, speak a word of warning? At this country hospital it is almost impossible to get well-educated probationers. All the possible young women are now assuming full nurses' uniform, with the addition of a large red cross, and being called and treated as *trained* nurses by medical men and society people connected with the British Red Cross Society. "They know all they need to know," a military medico said quite recently. Meanwhile our patients suffer, and will do so more in the future if all this "express training" is not discouraged.—Yours truly, Tired of Making Bricks Without Straw, East Anglia.

A careful nurse will keep a constant watch over her sick, especially weak, protracted, and collapsed cases.

FLORENCE NIGHTINGALE.

PHILANTHROPY *and the* PUBLIC HEALTH

Conducted by the New York Association for Improving the Condition of the Poor.

Bailey B. Burritt, General Director. William H. Matthews, Director Department of Family Welfare. Donald B. Armstrong, M. D., Director Department of Social Welfare.

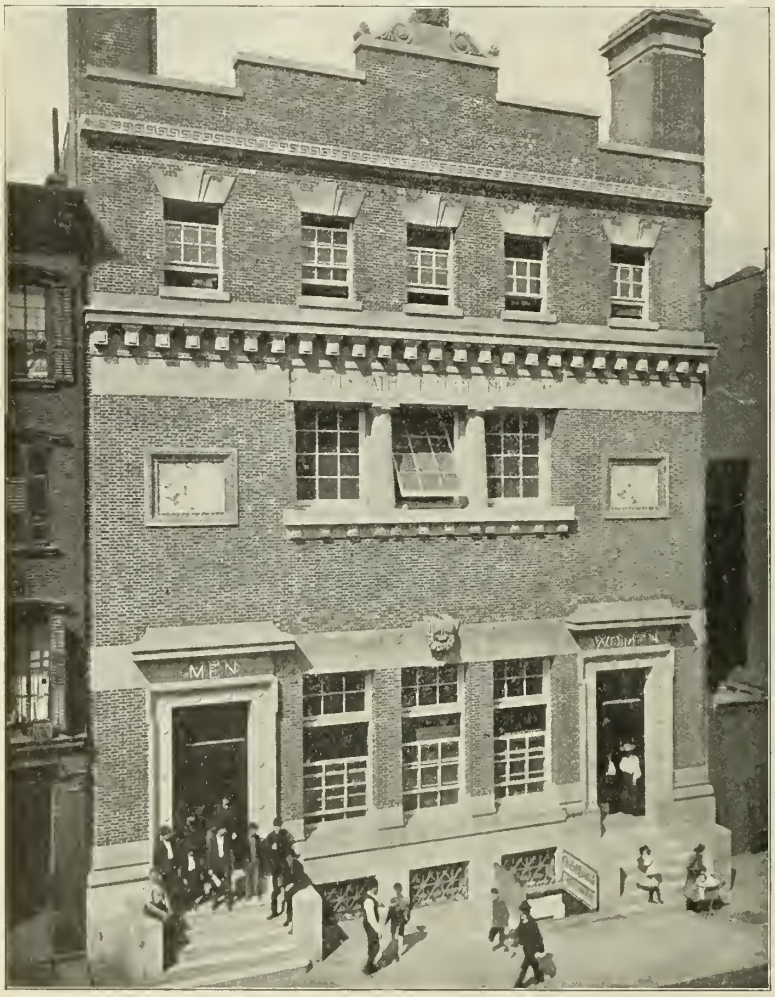
A PEOPLE'S LAUNDRY TO SUPPLEMENT PUBLIC BATHS.

New York Organizations Plan to Provide "Clean Clothes for Clean Bodies."

BY HOLLAND HUDSON.

Not the least factor in the problem of public health is that of personal cleanliness. The New York Association for Improving the Condition of the Poor, of which Mr. Bailey B. Burritt is general director, has every reason to believe that personal cleanliness has much to do with both the health and economic status of families in all walks of life. A family may be dirty because it is poor; but it is likely to remain poor because it is dirty. Cleanliness is at once a matter of personal hygiene and public decency.

The New York Association for Improving the Condition of the Poor first met this problem in 1891, when the "People's Bath" was established in New York City. The purpose of this bath was to make it possible for those who had the inclination but not the means for keeping clean, to realize this ambition. The effect of the immediate popularity of this bath was to start the municipality on a thoroughgoing policy of free public bath construction, in which it now leads all American cities. Fourteen public baths are now open to the public, with a total attendance of over 4,000,000 in 1914. Public baths have solved only part of the problem of personal cleanliness. It is still difficult for a person of small means to clothe a clean body with clean clothing. The Bureau of Public Health and Hygiene has devoted a considerable part of its energies since its inception two years ago, in determining, in the interests of public health and decency, how clean clothes might be made as accessible as clean bodies. An intensive investigation of residential wash-tub and hot-water facilities in four districts of New York City, containing a population of 205,850, showed them to be pathetically inadequate. The only facilities in the congested districts consist of ordinary laundries, whose prices are out of the question for families of limited income, and wet-wash laundries, whose methods are open to severe criticism from both a business and a sanitary point of view.



The Milbank Baths, New York City.

With these facts in mind, the Bureau of Public Health and Hygiene has fostered two enterprises which, it is hoped, may lead by a normal evolutionary process to public laundries, as the original "People's Bath" led to the present municipal baths, if a similar usefulness can be demonstrated.

The first of these has been to plan, with the Bureau of Public Buildings and Offices of New York City, the establishment of a public wash house, similar to those in other American and foreign cities, in connection with the new West 28th Street Bath, which will provide tubs, driers, etc., and to which for a nominal fee women can bring their clothes and wash them in clean, roomy and attractive quarters with proper conveniences for laundry work. A children's play room may be maintained in connection with this wash house for women who are obliged to bring their children with them.

The second and more unique enterprise is being conducted by the Bureau of Public Health and Hygiene of the Department of Social Welfare, under the direction of its superintendent, Mr. Philip S. Platt. It consists in the establishment and maintenance of the first semi-public model wet-wash laundry in the United States, operated at cost. This resembles the ordinary wet-wash laundry in that it relieves the household of its worst drudgery at a small cost, returning the clothes to the owner ready for ironing. It differs from the ordinary wet-wash laundry in that its methods are as sanitary as those of a modern hospital. The machinery used is of the latest and most efficient

type in the market; consisting of washers, hydro-extractors, etc. Clothes are handled with unusual care, and as the laundry is run at cost, thirty pounds of white wash are called for, washed and returned within twenty-four hours for 35 cents, or 25 cents without collection and delivery service.

The Milbank Wet-Wash Laundry is conducted constantly from the point of view of its service to the people in the neighborhood. At the same time it is a laboratory for testing in every detail the feasibility of a public laundry system. The laundry was opened only after a careful canvass of 500 homes in the neighborhood, which indicated that such a laundry would be cordially welcomed by most of these families.

The Milbank Laundry patronage has been increasing constantly since its opening in November, 1914. The families who have never sent out their "washing" before have been enabled by the exceedingly low charge to devote the time formerly spent on washing clothes to other home and family work. Families who have done their washing at home because they objected to the filthy methods and unsatisfactory work of commercial wet-wash laundries, have at last escaped the undesired burden without sacrificing cleanliness. All this has been accomplished within the small neighborhood immediately adjacent to the plant.

It is hoped that the public wash house on West 28th street will be equally successful under the management of the municipality. The establishment of people's laundries is a genuine move for public health and decency, and it is felt that both of these experiments, if successful, will demonstrate a field for legitimate and much-needed municipal action.

A STUDY OF LAUNDRY AND BATH FACILITIES IN THE HOME, SHOWING CONDITIONS WHICH INDICATED THE NEED OF A PEOPLE'S LAUNDRY.

District studies	Population	Percentage of families without		
		Bath	Wash-tubs	Hot water
Milbank Bath Section...	78,850	87%	36%	
Hudson Park Section....	53,000	99%	45%	94%
Franklin Square Section.	35,000	95%	27%	72%
Region of 28th St. and 9th Ave.	39,000	87%	50%	97%
Total and average..	205,850	92%	40%	87%

NATION-WIDE WAR ON TUBERCULOSIS.

Expenditure of More than $1,000,000 in Past Decades Has Reduced Death Rate 17 Percent—Work of the National Association.

Scarcely ten years ago the anti-tuberculosis movement in the United States was in its infancy. There existed only a very few struggling associations and poorly equipped institutions and dispensaries. Today more than 2,500 special agencies are in close cooperation with the national association, and the handful of institutions have increased to over 550 efficient sanatoriums, hospitals, and day camps, extending from coast to coast, with a bed capacity of fully 35,000. Thousands of physicians and visiting nurses are engaged exclusively in tuberculosis work. More than 250 open-air schools and outdoor classes are now in operation, while special provisions for the tubercular have been made in prisons, almshouses, and hospitals for the insane.

Legislation to control the spread of tuberculosis has been considered throughout the length and breadth of the country, resulting in the enactment of laws in forty-eight states and territories. Never in the history of the world has such a far-reaching organized crusade against disease been launched; yet, unfortunately, the goal—an effective, specific prevention and cure of tuberculosis—continues to baffle every effort. A long necessary step has been taken toward an ultimate solution in the remarkable campaign of popular education through press bureaus, exhibits, and moving pictures. The national association launched its press bureau in 1908, the first of its kind in the United States. Today over 185,000 bulletins are issued yearly to more than 8,000 newspapers. Cooperation with a score of other well organized press bureaus now existing in different states, and the new syndicates, has greatly strengthened and increased the association's publicity service.

While the expenditures of the national association in ten years have been but $200,000, it is due to a great extent to its stimulus that national, state, and local agencies have spent $100,000,000 in this fight against tuberculosis. A decline of 17 percent in the death rate from this disease in all its forms is shown in states where statistics have been kept for the past ten years. This cheering result of the extensive and varied campaign has come, not through the difficult paths in the science of immunity and its problems, but along the broad highway of prevention through hygiene and sanitation.

The association in its persistent attack on tuberculosis from every conceivable angle is beginning to get a proper perspective on this disease in its relation to other diseases; to realize fully that the preventive measures adopted for tuberculosis are identical with those necessary for the general conservation of health. The agency that should undertake the conservation of the health of the people is logically the government. The Pennsylvania and Ohio State Departments of Health have built up comprehensive and far-reaching organizations to wage war on tuberculosis. They each have a chain of dispensaries, supplied with corps of physicians and nurses, and a chain of sanatoriums. Each unit of these organizations dovetails into other units, not only promoting harmonious development of each phase of anti-tuberculosis work, but securing efficiency and economy. These states, by establishing and developing tuberculosis work under state and municipal control are most certainly taking the first steps toward an inevitable public control and support of the wider general health, as well as the social and recreation needs of the community as a whole. Gradually, the placing of responsibility for conditions that make for poverty, disease, and crime is resulting from the efforts of this association and the many other agencies in the public health field. The state and municipality will eventually come to realize the real value of the conservation of human life and human effort.

Not only do things in a workmanlike manner in your institution, but impress on the general public the fact that you are doing them right. I know a hospital where, in the maternity and children's departments, they compel doctors and high-class, clean visitors to put on a gown and cap before they can be admitted. The hospital has achieved a most enviable reputation as a scientific, carefully conducted institution. But in that same hospital they allow the filthy, vermin-infected friends of free patients to go into the maternity and children's departments during the busy visiting hours with never a sign of an overgarment on; and after the visiting hours there is a grand roundup of bedbugs and even less welcome left-behinds. Those visiting hours are nightmares, but they can't be helped; and the effort and intention are there and the reputation hangs on those.

PREVENTION of TUBERCULOSIS

Conducted by the Officers of the National Association for the Study and Prevention of Tuberculosis.

New York State Tuberculosis Campaign.

The earthworks of the worst enemy of the human race, tuberculosis, are being valiantly stormed in New York by regiments of physicians and laymen under the efficient leadership of officers of the State Department of Health.

The plan of campaign, as briefly outlined by Edward A. Moree, advisory expert in public health education, involves:

1. Employment by city, town, and village health boards of visiting nurses to work under the direction of the health officer.

2. Establishment of dispensaries by health authorities of the larger cities and villages for the examination of suspected cases.

3. Establishment of open-air schools for anemic and sickly school children predisposed to the disease.

4. The efficient medical examination of school children for the discovery of early cases of the disease and for the removal of adenoids and enlarged tonsils, and for the discovery of other physical defects.

5. Most important of all, the establishment of tuberculosis hospitals by county boards of supervisors for the cure of early cases and the segregation of advanced cases.

In nearly one hundred communities throughout the state, nurses are caring for the sick and giving practical instruction in hygiene; dispensaries in thirty cities and villages are offering free examination and advice; open-air schools are fast becoming the rule in the cities, and the larger villages are getting ready to swing into line.

J. N. Adam Sanatorium, Perrysburg, Cattaraugus County—Receives only incipient cases from the City of Buffalo. Upper picture, general view of buildings. Center, dining room. Lower, porch for women. Capacity 250.

New York State, some years ago, wisely decided that tuberculosis was largely a local problem, and the logical solution, apart from questions of financial expediency, was county hospitals.

With inadequate provisions for their insane, their prisons deplorably overcrowded, and wide awake to the sinister phases of the problem of their feeble-minded and the urgent need of large expenditures for segregation of these unfortunates, the states are already committed to more work than they can hope to accomplish in a decade. The fourteen states that have enacted legislation similar to the New York county hospital law furnish a more striking endorsement of the wisdom of New York State's tuberculosis policy than the counties whose boards of supervisors have established hospitals under this law. Twelve counties now have hospitals and nine more have voted to establish institutions under the county hospital law. Some of these nine are still looking for sites, while others have their institutions under way.

Montgomery County Tuberculosis Hospital, near Amsterdam—Insert shows farm house that was remodeled into the hospital. Cost of site $9,000; construction $15,000. 20 beds.

The new Union Hospital recently opened at New Ulm, Minn., is a three-story and basement brick structure. It was erected at a cost of $46,000, and $30,000 additional was spent on equipment. The hospital is said to possess every desirable modern facility, including mud baths, sun rooms, up-to-date operating room, fireproof steel elevator, etc.

BLINDNESS MATERNITY MIDWIVES

Conducted by Carolyn Conant Van Blarcom, R. N., Secretary National Committee for the Prevention of Blindness.

The Menace of Wood Alcohol.

Although for many years medical publications have abounded with editorials, papers and reports upon experiments in connection with the poisonous qualities of methyl or wood alcohol, we find today that the public at large and a very generous sprinkling of the medical profession have little knowledge of the real dangers attendant upon the use of this spirit.

The recent tragedy in Vermont, in which fourteen persons were killed and a number of others blinded by drinking whisky adulterated with wood alcohol, brings forcibly to mind the fact that this poison is dangerously available and that legal provisions throughout the country are inadequate to protect the public. The Vermont incident is an example of what happens every little while in other states.

A very recent instance is that of a number of Armenian rug weavers in New York City who were poisoned by drinking anisette, consisting largely of wood alcohol. Three of the men died, and two were blinded. As the groceryman who sold the anisette and the man who manufactured it have no property, it is not possible to secure damages for those who were blinded, nor for the widows of the men who died. These cases may be prosecuted by the district attorney and small fines imposed, the payment of which would simply enrich the state, but in all probability have little or no effect upon the problem as a whole.

The difficulty goes even further back than the small manufacturer—that is, to the producers of wood alcohol who rectify this poison so highly that it cannot be distinguished from grain alcohol, known to the trade as "Cologne spirits." This rectified wood alcohol, possessing all of its original poisonous qualities and closely resembling grain alcohol, has been put on the market under various misleading names, among them being Colonial spirits. As Cologne spirits and Colonial spirits look, smell and taste alike, we cannot wonder that the poisonous alcohol is sometimes used instead of the non-poisonous spirit.

The Vermont druggist claims that he ordered, and thought he was using, Cologne spirits, but that he was actually sold the poisonous Colonial spirits.

During the last session of the New York State Legislature, the Committee for the Prevention of Blindness endeavored to have passed a law designed to prevent wood alcohol poisoning. At the public hearing on this bill, the danger of confusing Cologne and Colonial spirits was emphasized by the president of the State Pharmaceutical Association. He described a case in which a druggist ordered Cologne spirits, or grain alcohol, to use in preparing his tinctures, extracts, etc. In response to his order he received a five-gallon can labeled "Col. spirits." For some reason this druggist analyzed the contents of the can, and found it to be wood alcohol, the "Col. spirits" evidently being used as an abbreviation for both Colonial and Cologne spirits. Since as little as a teaspoonful of wood alcohol has caused blindness, this man's precaution evidently averted just such a tragedy as has occurred in Vermont.

In spite of the abundance of such evidence as this concerning the dangers of allowing wood alcohol to be sold under present conditions, those interested in the manufacture of this product were successful in their efforts to have the committee's bill defeated.

The New York City department of health has recently amended its sanitary code to require all forms of wood alcohol to be labeled "wood naphtha" and to bear a poison label, together with the skull and crossbones. This is the most definite step that has thus far been taken in this country toward preventing wood alcohol poisoning from imbibition. This requirement, however, will be effective only in New York City, and will have no bearing upon poisoning following the inhalation of wood alcohol fumes in the industries.

Recently the wood alcohol manufacturers were requested to employ for rectified wood alcohol less misleading names than those now used. One firm has declared its willingness to label all of its rectified wood alcohol as *Columbian menthanol.* This change may be salutary in its effect, but it is feared that the retention of the well-known term "Columbian" will be less helpful than would the substitution of an entirely new name.

But even the adoption of an entirely satisfactory trade name for this dangerous product will not obviate the necessity of carrying on a widespread and vigorous educational campaign, for those who use any form of wood alcohol in their homes, hospitals or industries must realize that "wood alcohol by any other name will be as poisonous."

So far as we are able to learn, there is no state in the country in which the combined provisions of the liquor, pharmacy, agricultural, and health laws are adequate to prevent death and blindness from swallowing and inhaling wood alcohol. The United States claims the unenviable distinction of being the one country of which this is true.

When by state laws or through rulings made by the state departments having jurisdiction, all forms of wood alcohol are labeled poison, as is required by the New York City Department of Health, and wood alcohol in the industries is replaced by industrial (denatured) alcohol, we shall cease to hear of these pathetic and wholesale disasters.

It is announced that work will be begun early in the spring on the new home for St. Joseph's Hospital, Kansas City, Mo., to be erected at a cost of between $400,000 and $500,000. The building will be set back 160 feet from the sidewalk on Linwood boulevard, between Prospect and Wabash avenues, and will be surrounded by shrubbery and a light iron fence, leaving ample space for a garden in which patients may enjoy fresh air and rest. The hospital will be six stories high and contain 250 beds. From the ground to the first floor line the building will be of stone, but above the first floor line brick and terra cotta will be used. Each floor is to have two diet kitchens, a telephone will be placed at each bed, there will be dining rooms for nurses, sisters, and doctors, four electric dumb waiters for each floor, a dressing room for each floor, and four operating rooms. The dressing rooms are to be used for dressing and caring for injuries, making it unnecessary to remove patients to an operating room for such attention. There is to be a separate power plant, which will provide refrigerating, laundering, and other needed facilities. Later on, a chapel, quarters for the sisters, and a nurses' home are to be built.

A movement for a county hospital has been launched at Duquoin, Ill.

FOREIGN CORRESPONDENCE

The British Army Medical Service in the Field.

[The British Government objects to army officers writing for publication over their names; hence the absence of the writer's name at the end of this letter.—Ed.]

The sphere of duties of the Medical Service of the British Army is regarded as embracing four distinct departments: first, the preservation of the health of the troops; second, the professional treatment of the sick and wounded; third, the provision of medical and surgical equipment; and fourth, the collection and evacuation of the sick and wounded from the battlefield, the line of communications and the base (if in a foreign country), and their ultimate disposal, until recovery, invaliding, or whatever may be the final issue, at home. The second and third departments are entirely in the hands and under the control of the professional medical staff of the army; the first and fourth departments are to a great extent under the control of, and carried out by, the combatant authorities in whose hands must remain the many technical details involved in military administration, and in the movements of troops, but the laying down of principles, and the eventual responsibility for seeing that the necessary measures are effectively carried out, must remain with the medical corps.

A short sketch may be given of the arrangements that are actually in operation for the care and treatment of the wounded in the first place; though it must be fully acknowledged that the preservation of the health of the army, the maintenance of its fitness as a fighting machine, is of more importance than the treatment of sickness; and further, that in most campaigns, from a military point of view, as well as from the standpoint of professional work involved, disease is a much more important factor than wounds inflicted by the enemy.

The medical service in the field is organized on the principle of *rapid evacuation*, both of the wounded and of the sick; and it is considered that when this is effected by means of good organization and administration, the mobility of the army and its *morale*, or tone, are sustained and improved. The principle has also been adopted of a division of the organization into three zones, which in practice must overlap, but a clear conception of which will tend to a grasp of the general plan that should be carried out, whatever be the modifications needed in exceptional circumstances. It was the much respected professor of military surgery at the Netley Army Medical School, Surgeon-General Sir Thomas Longmore, a veteran of Crimean experience, who clearly laid down the principles that must be understood, whatever may be the modifications necessary owing to the conditions of particular cases. The three zones are:

(1) The Collecting Zone, corresponding with the area occupied by the Field Units; (2) the Evacuating Zone, corresponding with the Line of Communications; and (3) the Distributing Zone, which also includes part of the Line of Communications and extends outside the theater of operations.

In the *Collecting Zone* there are, first, the medical establishments with the Field Units; and secondly, the Ambulances. Every officer and man on active service carries, on a string around his neck, an identity disc made of metal, which shows his name, regimental number (except in officers), the unit he belongs to, and his religion; he also carries a first field dressing in the right-hand skirt pocket of his field service coat. Each complete military unit—that is, a cavalry regiment, a brigade of artillery, or an infantry battalion—has attached to it an officer of the medical corps, who has with him a corporal and two to four men of that corps, together with a noncommissioned officer and six or eight men of the regiment, who act as stretcher bearers. All these men have been trained in first aid, and during an engagement they arrest hemorrhage, apply the field dressing, and (if possible) remove the wounded from the firing line to the nearest cover, bringing them to the nearest regimental aid post; if this cannot be done, they are collected in groups, to facilitate subsequent removal. A specification tally is affixed to the wounded man, when he has been attented to, stating the nature of the injury. Severe cases have a red tally. In civilized warfare no one, except the stretcher bearers, is to take a wounded man to the rear, unless ordered to do so. The regimental aid post is, if possible, under cover, or out of the line of fire, but should be near enough to the fighting line to be easily accessible.

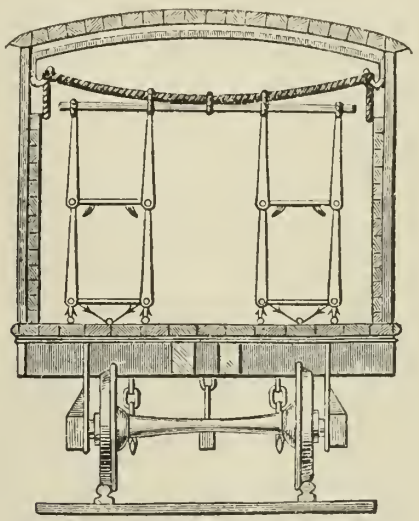
The Field Ambulance (which word has the signification of the French *ambulance*—that is, the whole establishment, including *personnel*, tents, wagons, horses, and equipment—and does not merely mean the ambulance wagon), is divided into three sections, A, B, and C, each of which consists of a Bearer Division and a Tent Division. The former advances with stretchers as near as may be practicable to the fighting line, and searches for wounded; the main business of collection, however, generally takes place after the battle, and may have to be continued for many hours, all available troops being called in to assist in the work, and search over the field of action systematically. The tent divisions of the ambulance prepare the dressing stations, which may be located in tents, or in buildings, if suitable ones are available. These dressing stations should be as close up as possible, their nearness to the fighting line depending on the nature of the country and means of protection from fire; they must be readily accessible, near a water supply, and capable of rapid expansion.

The *Evacuating Zone* corresponds with the Line of Communications. The medical establishment consists of three, or, in certain cases, four, separate services: (1) clearing hospitals, (2) ambulance trains, (3) advanced medical store depots, and in some circumstances (4) stationary and general hospitals.

The Clearing Hospital is the central point to which the collecting zone converges, and is called "the pivot upon which the removal of sick and wounded turns." By it is established a regular flow of sick and wounded from the front along the Line of Communications. There is one to each army division, and the hospital is accommodated in buildings, if they are available, rather than in tents; at the same time a clearing hospital must be capable of considerable expansion, as it is here that sudden accumulation of cases is likely to occur: it is nominally equipped for 200 patients. A great difficulty in the management of the clearing hospital is the decision of the question, what cases to retain, as likely to be able to resume duty

before long, and what cases to send down to the base, as likely to be of no use for some time; and it is here that blockage is almost certain to occur.

Ambulance railway trains to carry 100 lying-down cases are provided in the proportion of one to each division. This mode of transport is the best way of evacuating the field medical units, and is adopted wherever possible. There are three kinds: permanent ambulance trains are composed of coaches specially constructed for the purpose of conveying lying-down cases, and with corridor accommodation to kitchen, dispensary, etc.; temporary ambulance trains consist of ordinary vehicles with some



Transverse section of a goods wagon fitted on Zadovski's plan.

special arrangement, such as Zavodovski's, for slinging stretchers in the wagons. Improvised ambulance trains consist also of ordinary vehicles, improvised for sick transport as well as can be done on the spot. Advanced medical store depots, one for every two army divisions, are located at the advanced base. Within the line of communications area both stationary and general hospitals may be established under certain circumstances, but they more often come within the third zone, now to be mentioned.

The third, or *Distributing Zone* of medical operations lies partly in the war area, where it belongs to the line of communications, but includes also Hospital Ships and hospitals in the United Kingdom. In the former category are included stationary and general hospitals, base medical store depots, line of communications convalescent depots, and ambulance trains. Stationary Hospitals are located at selected points, and are organized for 200 patients each, but to be capable of considerable expansion; two are provided for each division, and buildings are used for the purpose, if available, rather than tents. General Hospitals are also provided in the same proportion of two for every division, each accommodating 520 patients (including 20 officers), and are housed in buildings, where available; supplies of clothing, necessaries, and equipment are issued to patients as required, and the accommodation, dieting, nursing, etc., approximate to the standard of the larger military hospitals in peace time. A Base Medical Store Depot is provided for every two field divisions. Convalescent depots are established in connection with general hospitals, to relieve pressure and insure that adequate accommodation is available at all times for serious cases coming down from the front. Hospital Ships are equipped for 220 beds each, and provided in the proportion of one for each division. Lastly, come the large military hospitals at home, such as the Victoria at Netley, the Herbert at Woolwich, the Cambridge at Aldershot, and many others at various stations, all of which are available for the reception of sick and wounded from the seat of war; and if these are not sufficient, military patients are drafted temporarily to civil hospitals in London and elsewhere.

A Retired Army Surgeon.

MINNESOTA TOWN HAS NEW SURGICAL HOSPITAL.

Modern Fireproof Building Erected at Dawson for Private and Free Patients.

The new Dawson Surgical Hospital, at Dawson, Minn., was opened in December.

The building is a modern three-story and basement fireproof structure, of brick, steel, and concrete, of the colonial style of architecture. The brick work is wire rough-cut, with rough raked joints, colored to match the brick. The roof is covered with asbestos shingles. The walls are built according to the concrete tile and joist system, of load-bearing Chaska brick, the inner course being hollow, to make the building warmer, as well as soundproof.

The floors in the patients' rooms are of maple over cinder concrete fill. In the corridors and the sun porch the floors are of Italian terrazzo marble. The baseboards in the corridors and sun porch are of the same construction as the floors, with all corners rounded, to make them easily kept clean. All floors in the operating and sterilizing rooms are of white ceramic tile, with round-cornered baseboards of the same material. The finish in these rooms is white enamel. The rooms on the first and second floors are said to be beautifully finished. The doors are of the finest quality of six-ply flush veneer birch. The finish in the basement is in white enamel.

At the end of each corridor are large French doors opening on a balcony with an ornamental iron rail. All corridors and the operating room are vented through large galvanized iron vent ducts, connected with the open air through a large ventilator on the roof.

All wall and ceiling surfaces throughout the building are tinted in soft colors pleasing to the eye.

One of the main points of attraction is the beautiful marble stairway.

There are several private rooms, some of them with private baths; and every convenience is provided for the comfort of the patient. There is an elevator, connecting the four floors, and a dumb-waiter connects all the diet kitchens with the main kitchen in the basement. The electrical equipment includes a noiseless annunciator.

The lighting of the operating room is of the most approved and modern type.

The building is heated by the vapor vacuum pressure system. On each floor is an opening into a flue, through which refuse matter and sweepings may be dropped into an incinerator and burned immediately.

There is an x-ray laboratory in the basement, and another room will be equipped with apparatus for bacteriological work.

The hospital was erected at a cost of $33,000 by an incorporated company in which there are more than a hundred stockholders. The staff is composed of Drs. A. A. Stemsrud, H. M. Johnson, and O. N. Meland, all of Dawson.

It is planned to establish a school for nurses in connection with the hospital.

LETTERS *to the* EDITOR

Dr. Grenfell on Belgian Relief.

St. Anthony, Newfoundland, December 21, 1914.

To the Editor of THE MODERN HOSPITAL:

The people here have been asking me, "Has the war anything to do with the weather?" Is a just Providence trying to freeze the passions and cool the fury of the slaughtering hosts of Europe? Here a summer that for the first time in the memory of living man saw the Straits of Belle Isle nearly full of old Arctic ice on the first of August, has seen our mail steamer unable to cut through new ice early in December many miles south of the Straits.

Eleven times already this winter our wires have been broken down by the storms and left us wondering if peace has also overtaken suffering civilization, now that we are sorrowing over freights of the necessities of life, which the late summer made it impossible for the fishermen to purchase earlier and which get only just near enough to us to leave us the more impatient over their whilom proximity when they "turned again south." Moreover, unless westerly gales come and come strong and soon, we shall expect no more supplies till next June. The last boat, by which I got back to hospital a fortnight ago from a long round of visits to the villages at the bottom of this great bay, struck the ice sixty miles south of here. The sea was never more beautiful. Too rough to freeze in the prosaic flat manner which we associate with fresh water ice, it had taken to itself an ice mantle of round pans about a foot in diameter. As we plodded through it the waves raised this ice-chain armor, and it looked for all the world like the scales of some leviathan salmon which, glinting in the winter sun, seemed to us as we watched it, fascinated, to be gorgeous, gold-edged silver plates.

Having charged and butted her way far enough into the standing harbor ice to land freight, the goods brought from the South were soon being deposited on this beautiful natural wharf, and to our infinite joy we beheld box after box of splendid warm clothing from the Ladies' Needlework Guild of Boston, Massachusetts, heaped up amidst a chaos of big sledge dogs, komatiks and men in their picturesque canvas overalls or kossacks, which our people are using increasingly every winter. This was indeed another scene which fascinated not only the eye but the soul of the solitary doctor, who had in his mind's eye the ill-clad bodies of many patients whom he had examined on his recent trip. It was dark but for a brilliant moon, for we had "reached in" in the early hours of the morning, and cold feels colder far in the dark before daylight. But the sight of the welcome gift from the New England ladies warmed up one's soul to a fervor which made this letter of gratitude simply inevitable. I wish most heartily to thank the contributors through your columns and to suggest that if they do not fully realize the value of their message of love they should come and try our harbor ice at 2 a. m. with a breeze of wind blowing and the thermometer away below zero; or try the same night in some little cottage without radiators, when with only a mean, scanty, cotton clothing supply you have crawled out from under an insufficient blanket and haven't yet rekindled the stove. A frozen sea may stretch between the giver and the recipient of the clothing, but these spans woven with woolen links annihilate space with their spiritual bonds.

Material facts are sometimes lightly considered the only ones of interest; but the sacrifices which our people have just made to send help to the poor Belgian refugees have so impressed us that we cannot help but see how contagious a fever love is and what a reflex it always produces, and how its irresistible energy can never be lost.

"We must do something or stop praying with our mouths," was the sentiment of the village. "Silver and gold have I little, but such as I have I will give," was the deduction from the condition of the village.

On December 16th our large school room, loaded with gifts in kind, was the result. The work done by our generous helpers has not only trained capacities but bred a spirit; and as on the fateful day of the great "scale of work" the various "goods" were brought in, one scarcely knew whether to laugh or cry at the generosity displayed.

Here came a man with a new dog sledge, next a poorer man with a brace of wild ducks, two women carrying cakes, a man with some snow shoes, a woman with two loaves of bread, a young fellow with a splendid northern netted dog whip, a man with a wonderful model sledge, dolls, stuffed puppies, and a complete outfit even to toy snow shoes and gun. Next followed a woman with a pair of double knitted woolen mittens which she asked if she could buy back herself for her Charlie, as he needed them. (I saw Charlie's bright smile later when he got them.) Pretty soon in came another woman with a hooked mat, then a man with a whirligig set of model boats for a windvane, another with a pair of skin boots, and a poorer one with only a pair of boot bottoms, a lad with a rolling pin and board, and another with a footstool, splendidly carved with a Union Jack, "on which you could tread firmly," then some women with embroideries and lace work and fancy articles. Finally a real live Mrs. Wiggs handed in a beautiful new pillow slip. "There's sixty cents' worth of new stuff in it," she told me—a widow's mite, if ever there was one. There was one table with fine homespun and thick, warm mittens and "vamps" to go inside our skin boots, and another with beautiful mats with local scenes and lovely artificial flowers, already potted and made after the real French flower model—a trade which Mrs. Grenfell learned last winter in order to be able to teach some of the women here on the coast. The rummage sale was a marvel of precipitates. The book and Christmas card stall could not have been duplicated in New England or "Old England," while the model well, with the bucket and five-cent "dip" was so drained of supplies that volunteers had to rush out into the night to "compel more things to come in" to prevent the well being frozen up. Pathos was mixed with hilarity. One man gave the engagement ring which the girl who jilted him had sent back. Two men who had rings of their own gave them to be auctioned. One sold his watch and donated the proceeds saying that he could find out the time with a cheaper one.

The pessimists had loudly proclaimed that there would be no one to buy all the things, and even the most optimistic of us wondered where all the money was to come from to make all these purchases. Probably that will always be a secret. No one really knows. One friend who brought two large dry codfish and a smoked salmon admitted that he had spent a dollar and a half in cash and he had six children. Some who had done well with their

summer's fishery came for thirty miles to spend some of their money at the fair for the sake of the Belgians. Although the temperature outside stood at zero the ice cream stall had to shut down from sheer exhaustion before the fair was half over.

But marvel of marvels—when the uproar was over and the last of us gathered to safeguard the leftovers and decide what was to be done with them, everything was sold out. The last of the cakes had been auctioned at a dollar and a half, and the buyer, a really poor man, allowed it to be sold over again, "because he was that glad to get another dollar for the fund."

No, sir, not a thing remained. You could not have equipped a church mouse starting out in life, unless it had been with the lost fragments. But four hundred and seventy solid dollars remained for the "poor and distressed" brothers elsewhere. Could there be any better preparation for Christmas? These pleasures endure forever, and are a foretaste of the only heaven that is worth while and are what every one of our folk all along this bleak shore want to wish their generous friends everywhere.

Since this was written another $120 has been given. Can we possibly rise in this barren corner of the earth to the honor of five figures? It is honestly the Christmas decorations we are looking for. Miserly enough we feel for once. Those of us who came here twenty years ago can well remember the day that we could have indulged no such aspirations. Is it not a great message to all our generous helpers that not a few have said to me, "We could never have done it but for the Mission?"

WILFRED T. GRENFELL.

[The secret of where most of the money with which to purchase the various "goods" came from has, in a very unexpected way, been revealed to the editor. In the little outports near St. Anthony, after the ice finally broke up, there had been a late catch of fish, a very unusual thing, so these people were a little better off than their friends on the Labrador. Lady Davidson, the wife of the Governor of Newfoundland, gave her patronage, Mr. Joseph Moore of St. John's sent $50, and other well-to-do people and nearby villages contributed sums of money to be used in purchasing the articles. Lock's Cove sent $17 and a buyer. The contribution of $120 was subscribed by the Orange Lodge.—Ed.]

Mr. Sprague Writes About Sterilizers.

To the Editor of THE MODERN HOSPITAL:

My attention has been called to your article on "Modern Sterilization" in the January publication of THE MODERN HOSPITAL. While in Chicago in 1911, I called at the Michael Reese and had the pleasure of a brief interview with you, so in writing I feel that I am addressing one to whom I am not an entire stranger, although in your article you speak of "Frank Sprague" as author of the sterilizing methods now so generally practiced throughout the world, and certainly give credit to "Frank" as having furnished apparatus for the practice of the methods which stand to this day as models of mechanical excellence unequaled by others who have entered the field within the 30-year period since "Sprague Dressing Sterilizers" came to the service of the surgeon and made modern aseptic surgery possible. There can be no question but that your complimentary article was intended for me, and it is much appreciated. I feel a debt of gratitude to you for it, still can but regret the use of the name "Frank Sprague" instead of A. V. M. Sprague—the name known pretty generally with the profession throughout the world in connection with sterilization. I know of no other Sprague but myself connected with the work, so am assured that this is a case where given names became misplaced. Will be much pleased if you will correct in THE MODERN HOSPITAL in such manner as may suggest itself to you.

You may, perhaps, also remember me as the author of "Modern Hot Air Therapeutics." Since I introduced the gas-heated apparatus, electricity has come along and broadened out this field of benefit to mankind.

I quite agree with you that now, after thirty years' practice under the methods and with the apparatus for sterilization of which your article was the subject-matter, it is time to look for improvements, or, perhaps, change of method. I have had these thoughts in mind for the past year or two and am quite inclined to put these mental suggestions into form for practical demonstration and proof. I will write you a little later on in regard thereto, if I may have your permission.

Yours very truly, A. V. M. SPRAGUE.

Modern Sterilization—A Criticism.

To the Editor of THE MODERN HOSPITAL: January 5, 1915.

Your editorial in the January number of THE MODERN HOSPITAL on "Modern Sterilization" was pleasing to me in so far as it called attention to the fact that mere nickel-plating and extra "fixings" were great consumers of money in the purchase of sterilizers. I have always felt at the exhibitions of sterilizers on the occasions of the hospital association conventions, that the "fanciness" of the apparatus was given altogether too much importance and had very little relation to efficiency.

Anything you can say that will lead the hospitals to pay more attention to the manipulation and principles underlying the care of their sterilizers will be well worth while, if by that you can rob them of the idea which now seems to possess so many, that mere prettiness means efficiency, and that a metal polish massage is all that is necessary in keeping the "internal workings" as they should be.

I cannot agree with you, however, as your editorial proceeds to the discussion of the bacteriology or your attitude toward the dangers from the "spore-bearers." That there does exist a danger due to the pathogenic spore-bearers would seem to be sufficient basis for conducting sterilization so that this danger would always be obviated, no matter how remote or rare the occasion may be. I think I know your ideals of hospital management too well to allow myself to believe that you would advocate any lessening of the care used in sterilizing, and I am having a hard time reconciling your editorial with the standards I know to be yours. The line of demarcation between the non-spore-bearing and the spore-bearing organisms is well defined, it is true, but it would seem more sensible and rational to use all efforts possible to eliminate all danger by killing the most resistant spore-bearers. Especially is this so when it can be done with the present apparatus with only a little care and absolutely no change in the routine time and pressure.

As to the death point of the spore-bearers, your statement of the conditions required by the catgut manufacturers is rather misleading when applied to the conditions of fifteen pounds pressure for one-half hour, as practiced in the routine sterilization in pressure sterilizers. The problems are entirely different. In the preparation of catgut, the material must be free from moisture (water), or else the catgut will undergo a cooking process and be destroyed for the purpose intended. In that process the heating takes place in a bath of some high boiling substance, such as cumol. This is, in other words, dry heat, and it is a well-known fact that without moisture present, the temperature required for sterilization is much higher than that required in the presence of moisture, as is the case in the autoclave. I have, therefore, to take issue with you when you say, "If that is true, then we are not destroying spores in our fifteen pounds, 250 degrees, that we apply in our dressing sterilizers." The most re-

sistive spore known will be destroyed under the conditions used in pressure sterilizers.

I believe that much remains to be done to bring sterilization beyond the danger line and to overcome the hypnotism of nickel and porcelain. The guarantee of the manufacturer is taken to mean "in perpetuity" irrespective of the kind of attention or non-attention that is given to the poor inanimate instrument, and in my very brief experience with the subject of sterilization in hospitals, I should say that the routine of "going through the motions" had assumed its phase of being the "greatest indoor sport."

To conclude, it seems to me that a much simpler type of apparatus can and will be designed to accomplish sterilization of dressings, but this instrument must be so constructed that it will provide for the destruction of the spore-bearers as well as the others.

A. W. DIACK.

More About Sterilizers.

New York, January 6, 1915.

To the Editor of THE MODERN HOSPITAL:

Your editorial in the January number of THE MODERN HOSPITAL is bound to awaken a lively interest among manufacturers of sterilizers, and its breezy, fearless, and original tone has at least the merit of originality; as such it is certain to be welcomed by both manufacturers and hospital authorities alike.

As manufacturers of sterilizers, we feel that you have presented our side of the case without the necessity of further elaboration, but after having perused your article several times, and each time with additional pleasure, the writer cannot escape the conclusion that you have presented another "The Lady or the Tiger" enigma. The fact that sterilizers of more simple construction and of lower cost are desirable is admitted, but you will at the same time admit that it is equally true that the demands of the users of sterilizers are becoming more and more exacting, and no sterilizer can possibly meet with any considerable success as a selling proposition which fails to fulfil the very elaborate requirements of modern surgery. We feel, too, that modern sterilizers fulfil the demands made upon them to a considerable degree of perfection, and no one has yet been able to devise the ideal, simple, and inexpensive apparatus such as you picture. For ourselves, we stand prepared to reimburse the inventor of such an apparatus with a princely royalty. Let him come forth.

THE HOSPITAL SUPPLY COMPANY.
BY LEON L. WATTERS.

[THE MODERN HOSPITAL is an open forum for the discussion of hospital problems. That the last word has not been said on the subject of sterilizers is indicated by the above two letters; that the editor who wrote the editorial under criticism was correct in his proposed solution of it is not at all so certain. The writers of the two letters are both men thoroughly posted on the topics they undertake to discuss, and their ideas are entitled to great weight. We shall be glad if there are others who have something to say on this important subject.—ED.]

PATIENTS ORGANIZE TO HELP OTHERS.

Minnesota Association of Patients and Ex-Patients Proposes to Aid Sufferers From Tuberculosis.

Minnesota is opening up a new field for social service work. This time it is the sick, and the poor, not the healthy and affluent, who are to band together to help the needy.

The "Association of Patients and Ex-Patients of the Minnesota State Sanatorium for Consumptives" is a new society, the purpose of which will be to follow up all cases discharged from the sanatorium, find suitable work for people who are recovering their health, and help get legislation to advance the interests of convalescents.

Only persons who have been patients at the State Sanatorium at Walker for three months or more are eligible to membership. The first work of the association will be to encourage such legislation as will make it possible for members to have the preference in the selection of laborers to reforest state lands. A legislative committee of five members living in or near St. Paul will start work immediately on this project.

Many patients who are discharged become employers of labor, and others can influence the choice of employees. They will all cooperate to get suitable work for their fellow members. Patients in smaller communities where there are no dispensaries will be assisted to medical attention and nursing. Local health societies will be notified of the discharge of patients.

Dr. George William Beach, superintendent of the State Sanatorium, will be chairman of the association. "For some time our patients have recognized the need of a society which would be of benefit to them after discharge," says Dr. Beach. "Aside from the bonds of sympathy resulting from facing similar dangers before admission, there are added those of having taken the same treatment for months, and the fact that they know from communication with discharged patients that it is not easy to continue on the road to health, nor easy to get the right kind of work. The patients can best understand and sympathize with each other. The new association will be a clearing house to look after discharged patients."

There will be no salaries and no dues in the association. Regular meetings will be held at the sanatorium, and elsewhere if deemed expedient. Quarterly letters will be sent by the chairman to every member asking for information as to his health, occupation, wages, and if he desires other work.

The official paper of the association will be "The Pine Knot," which is already being published at the sanatorium.

Four counties in Minnesota, Grant, Douglas, Lac Qui Parle and Blue Earth, voted on county tuberculosis sanatoria at the last general election, and in all four counties the sanatorium won. There are now 35 counties which have taken action for county tuberculosis sanatoria in Minnesota. The legislature will be asked to make appropriations for state aid to these sanatoria, in accordance with the county sanatorium law, similar to those already granted, and equaling half the cost of construction, and half the maintenance of patients unable to pay.

MARY A. DILLON.

On his return to London from an inspection of the French military hospitals, Sir Frederick Treves, sergeant-surgeon to the king of England, said that the American Ambulance Hospital was giving the best service rendered in Paris in the care of the wounded. He attributed the success of the institution largely to its large fleet of motor cars, facilities for quick transportation being the greatest need. The *Figaro* praises the American Hospital highly, saying that it possesses "a staff above par." President Poincare visited the hospital recently. He commended the excellence of the surgical methods employed, and was particularly impressed by the work of the dental department.

Miss Emma M. Nichols, superintendent of nurses at the Boston City Hospital, is one of the busiest hospital workers of the country. In addition to supervising the nursing of the large institution with which she is connected, she is treasurer of the Boston City Hospital Nurses' Alumnæ Association, president of the Massachusetts State League of Nursing Education, a member of the national committee of the American Red Cross Nursing Service, treasurer of the Suffolk County Central Directory for Nurses, and councillor of the Massachusetts State Nurses' Association.

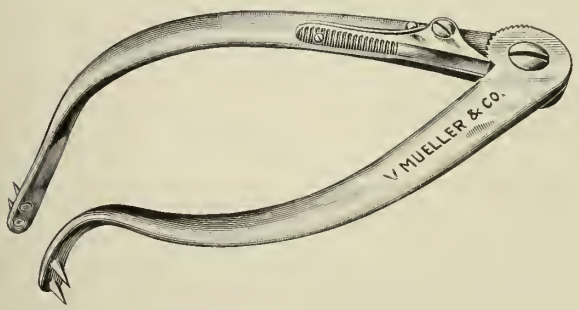
NEW INSTRUMENTS and APPLIANCES

Vincenz Mueller, Technical Editor.
Geo. W. Wallerich, Associate Editor.

Retractor to Facilitate Perineal Repair.

BY DR. L. M. STEARNS, KEARNEY, NEB.

The gynecologist and the obstetrician will appreciate this new retractor, which will be a great help to them in the operation of perineorrhaphy, where two assistants were formerly needed, both armed with the so-called bullet tenacula forceps, which not infrequently tore the flesh and thus occasioned additional delay. The operation can now be done with the aid of this retractor and without any other assistance except that of a nurse. Consequently, this instrument will appeal especially to those operators who are sometimes forced to do this work in the home of the patient in the rural districts. It is operated as follows:



Stearns' peri eal retractor.

The teeth of the blades are placed astride the corunculi myrtiformi at the margins of the tear, and the blades are separated to the desired degree. The posterior vaginal wall is then placed on a stretch and the incision of the mucocutaneous junction can be made with a pair of sharp-pointed curved scissors. The vaginal wall is now raised from the rectum and V pieces removed from both sides of the median line, after which the muscles are grasped and the stitches placed; the retractor is then removed and the stitches tied.

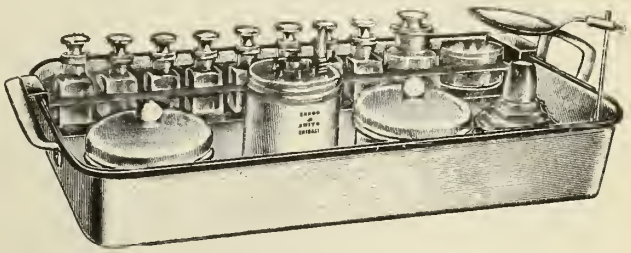
If it is desired to use the continuous stitch, the retractor can be adjusted from time to time, as the stitch is drawn taut and removed when the deep suture is in place.

Illinois Training School Hypodermic Tray.

This outfit consists of a steel porcelain enameled tray 16 inches long by 10½ inches wide by 2½ inches deep, with substantial handles at each end. A German silver nickel-plated rack, running the full length of the tray and occupying one-third of it, is constructed to hold eight one-half-ounce square-form glass-stoppered bottles, which act as receptacles for the hypodermic solutions or tablets, whichever the institution desires to use; a two-ounce bottle to act as a receptacle for sterile applicators; and a small glass needle box 1½ inches in diameter by 1⅛ inches in depth, to act as a receptacle for an extra supply of hypodermic needles. The rack is easily removed and can be readily cleaned.

The tray is also supplied with a hypodermic needle sterilizer, comprised of a four-ounce brass alcohol lamp, with a vertical stem riveted and brazed to it, which acts as a support to a German silver tablespoon, all of which is nickel-plated. The cap or the flame extinguisher is chained to the lamp so that it cannot be lost.

Two white enamel sponge jars, 2½ inches in depth by 3½ inches in diameter, with covers, are supplied, and a six-ounce ointment jar with a German silver nickel-plated screw top, which is perforated in such a manner as to admit one hypodermic syringe, one thumb forceps, and six hypodermic needles to be suspended through the cover into the jar and to stand in a sterilizing solution, ready at all times for immediate use.



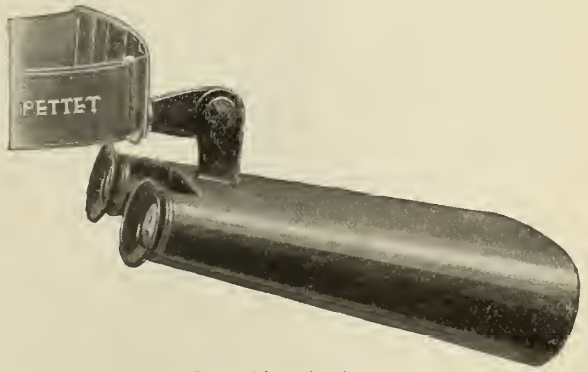
Hypodermic tray.

What is known to the trade as R. and B. hypodermic needles are recommended. These have a threaded shoulder and screw into the cap of this ointment jar left-handed, thereby enabling the nurse to screw the syringe into the needle and at the same time unscrew the needle from the cap of the jar, which obviates the necessity of touching the needle at all.

Realizing that there are many ideas relative to the various items to be used upon a hypodermic tray, sufficient space has been left in this tray for any additions that may be desired by the purchaser. This tray is made and sold by Sharp and Smith, Chicago.

Improved Binocular Magnifier.

The inventor of this new binocular loupe claims it is the highest power binocular magnifier made, giving an enlargement of five diameters, whereas the strongest binocular loupe now on the market gives only two and one-half diameters. The working distance is twelve inches,



Pettet binocular loupe.

which is the natural reading distance. This gives plenty of room for the operator's hands between the magnifier and his work, as well as good illumination.

The lenses are so constructed that the intrinsic muscles of the eyes are at rest when the instrument is being used, at the same time there is a natural convergence for the working distance, giving a true sense of distance with full stereoscopic effect, which is so essential, especially in the removal of foreign bodies from the eye.

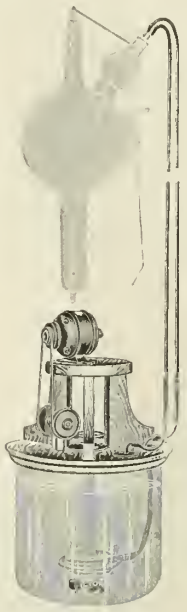
The magnifier is made of aluminum, hence is very light in weight. It is supplied with an adjustable, soft leather headband or, when preferred by the operator, a metal headband. It is so arranged that the operator is able to see under and around the instrument for convenience in seeing and picking up the necessary instruments without shifting the loupe.

The oculist who has often complained that the power of the well known Berger loupe is too low and the working distance too close (as one has to place the lenses close to the patient's eye in order to get the proper magnification) will no doubt find this new apparatus a welcome addition to every armamentarium.

An Automatic Water-Cooling System for Roentgen Therapy and Fluoroscopy.

As every hospital superintendent and surgeon is interested in keeping down the operating cost of his x-ray department, anything new which tends to reduce this cost is naturally of more than passing interest. This is especially true at this time, since we are to a great extent dependent upon Europe for supplying x-ray tube material, particularly the glass. While most x-ray tubes now used in this country are built here, the glass for them is imported.

Just why we cannot as yet produce chemical glassware which compares favorably with the European product, we do not know, but undoubtedly the x-ray tubes made with the imported glass are far superior to any we have been able to produce here. In consequence of this, it is important that all possible steps be taken to conserve our present supply of x-ray tubes.



The water-cooled type, which is now being more generally used than formerly, offers many advantages, in that the anode can be kept comparatively cool, which means that a more improved state of vacuum can be maintained within the tube, and consequently higher penetration may be had. The tubes which fluctuate quickly under the stress of a heavy current or continued running cannot give good results, as they have a tendency to change rapidly in penetration, the result being that the operator cannot reproduce, within a reasonable range, the same results in each case, current conditions being the same.

By the use of the water-cooled tube the vacuum remains practically the same, though the water must be circulated so as to distribute the heat. The apparatus illustrated has recently made its appearance on the market and seems to solve the problem of water circulation of x-ray tubes without the possibility of grounding the current.

The device has a glass reservoir with displacement for five gallons of water. The water is forced into the glass reservoir of the x-ray tube, out and back into the large reservoir by means of a small centrifugal pump, connected by means of a leather belt to a small variable speed motor. The belt also serves to insulate the supply current from the water.

The circulation of the water is automatic and requires no attention after the apparatus is once started.

HINTS FOR HOSPITAL SUPERINTENDENTS.

Whatever you do, don't allow any member of your family, or any relative, to be employed in your hospital in any capacity. Even the most helpful and efficient employee, if a relative of the superintendent, is sure to stir up trouble. Envy and jealousy are pathogenic organisms that thrive in every hospital.

The threatened shortage of pure potash green soaps has been relieved. We are reliably informed that one of the makers of potash soaps has secured several car loads of potash, enough to make all the green soap required for hospital consumption for quite a while to come. We understand that the price has been reduced.

No matter what sort of water you are using in your hospital for drinking purposes, you had better have it analyzed every once in a while. Many epidemics of typhoid have swept through hospitals because the plumbing and the sewage got on too intimate terms; especially where pipes run together through concrete.

When you buy battleship linoleum, be sure that it has been sufficiently dried while hanging in the factory. Because of the tremendous boom in battleship for hospital floors, manufacturers seem to have difficulty in holding it long enough to get it thoroughly dried out; the result is that even when it has been well laid, chair feet, casters, and even heels make dents that remain.

Hospital superintendents cannot *demand* the respect of their boards and staffs; their work and their knowledge of their business must *command* it. Once let a board become impressed with the idea that its superintendent knows more about hospital practice than any of the members, and that superintendent's presence will be sought at the board meetings. And the same thing is true of the medical staff. Don't go around whining because your board shuts you out of its meetings, and transacts the business of the institution without even a thought of your existence. Show them, by your grasp of things, and by your businesslike methods and plans, that they cannot do justice to their institution without your advice and counsel. When matters come up involving a precedent, tell them what other hospitals are doing about that particular thing; if you don't know, that is precisely what THE MODERN HOSPITAL is trying to help you learn; better read it pretty closely.

QUERIES *and* ANSWERS

To Restore Green Oil Soap.

I have noticed that our green soap has become chilled, or turns granular, with a light yellow color. We keep it in a cold storage room. Does freezing weather affect the soap? What is the best way to treat it?

V. E. H., Minneapolis.

If your potash (green) soap should become chilled and turn light yellow and granular or crumbly, put the soap in a very warm room until it regains its golden yellow transparent color. Freezing temperature does not injure the quality of green oil soap, but it suds better if dissolved after it is warmed up. If you have not a warm enough room to prevent chilling, take the amount you want and dissolve into soap stock or suds, press it into chunks, and place it in enough very hot water to cover the soap; and let it stand for a half-hour, and do not stir or agitate it. The hot water will warm the soap to the proper temperature to bring it back to its natural state. After a half hour's time, you may stir and dissolve the soap, or take it out of the water to be used as desired. If the soap has no filler or adulterant it will work as well as ever. It is important not to stir the chilled soap when first put into hot water.

Sepsis in the Hospital.

To the Editor of THE MODERN HOSPITAL:

Our doctors are constantly complaining that even simple wounds in our hospital become infected, while this same class of injuries and minor operations treated at home get well without any trouble; it is true that a good many of our wounds get small infections, not very serious, and only delay the recovery of the patients a few days. Is there any excuse for hospital wounds becoming infected, and if not, what can we do about it? Where is the trouble? We try to observe all the rules of aseptic surgery, and keep as clean as we can.

ONE IN TROUBLE.

Naturally there is more likelihood of infections in a hospital than anywhere else; that is why we are compelled to take such great precautions to prevent them. A large majority of sick people have infections of one sort or another; the contact of these sick and hurt with one another, and the common use of dressing rooms, utensils, and instruments, to say nothing of interns' and nurses'—yes, and surgeons'—infected hands, all multiply the dangers.

But there are pretty definite harbors of infections in hospitals, and some well understood and very common methods of contact between the organisms and the receptive host. You alone cannot cure the condition; you must get your pathologist, or the best man in pathology on your staff, as well as the surgeons who complain, and urge them to help you find the source or sources of the infections of which they complain, then go energetically to work to remove the cause.

A hospital is never better than its medical staff, and it is the business of the staff to guide you on all matters of medical science, and to help you keep things up to a modern scientific measure. A dirty, infected, ill-smelling hospital generally has a medical staff to match.

For the Protection of Superintendents.

To the Editor of THE MODERN HOSPITAL:

What protection is there for the hospital superintendent against an unsatisfactory engagement?

Desiring professional advancement, and receiving a promising offer, I left a hospital of seventy-five beds and an excellent board of trustees, who offered to advance my salary to that offered by the larger institution, and was woefully disappointed.

The hospital was not as large as represented, and the board was completely dominated by the will of one person. My hands were so tied that success in my work was out of the question. After a six months' struggle I gave it up, and, declining repeated offers of my old position, went to my home for rest, a wiser but a weary woman.

I had served nearly eight years in one hospital, and three in another, and "they" had every opportunity to investigate my professional record, and were practically sure what they were getting.

Should not there be some means of information equally enlightening for the superintendent?

Standardization is going forward, but a hospital may come up to a required standard of equipment and yet be the victim of a board of trustees who make working conditions impossible. Such an institution cannot *progress*, but may *live*—until (as in the case above cited) its cause has been espoused by many unfortunate superintendents. "Experience is a dear school."

Could THE MODERN HOSPITAL assume the role of reference bureau? A SUPERINTENDENT.

Unfortunately, the writer tells a story that is all too common. Of course boards of trustees should know "what they are getting" in a superintendent, and equally, applicants should know all there is to be learned about the hospital to the superintendency of which they aspire; and this is hard to accomplish. Often applicants are asked to visit the town and appear before the board—all between trains. They do not know anyone to whom they may go for confidential information, and the most astute will learn only what the board wishes to have known. It is almost impossible to cure such a situation. The only way for applicants to do, it seems to us, would be to get in touch with some of the members of the medical staff and have a heart-to-heart talk with them; usually these men are only anxious for good service, and they know what good service is; they know better than anyone else whether conditions in their institution will lend themselves to the service they require, and as a rule they will be honest and frank with anyone who has a right to know, and who is thinking about so important a step as accepting a position as head of a hospital. Better not stop after seeing one staff member; see several, and have some private talks with two or three members of the board, especially those who have not had much to say in the meeting. A hint here or there will often show whether there is trouble, and if so, its nature. Then, when the trouble is known, it will be far better to go right straight back to the president of the board or the dominant person, state the case, and have it out.

The Maternity Hospital Society of Brownsville and East New York is the name of a new organization which proposes to establish a thirty-bed maternity hospital at Brownsville, Long Island. The institution is to be nonsectarian in character, and is to be maintained by popular subscription, donations and bequests. It is estimated that the cost of building and equipping the hospital will be $55,000. A medical board will render services gratuitously, under the direction of Dr. John A. Polak and Dr. Abraham Mandelbaum. In addition to regular hospital service, the association will furnish nurses and physicians in homes where families are too poor to pay.

THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to THE MODERN HOSPITAL, Kitchen Department, Metropolitan Building, St. Louis.

Incinerators.

The great trouble with incinerators of the type which utilizes the heat of gas directly on the garbage is that the combination of heat and acids from the garbage eats up the metal linings of the incinerators in a very short time. Where natural gas is used, the life of these incinerators is exceedingly short, and when the carelessness of the help in cleaning them out is added, the linings soon give out and must be constantly renewed. This makes the operation of this type of incinerator very costly and unsatisfactory. Unfortunately, it is too much to hope that they can be improved upon to any great extent, because the combination of gas heat, acids, and unprotected metal predicates the destruction of the metal, and always will do so.

The large incinerators, which are of fire-brick, with grate bars of heavy castings, and with either coal or natural gas fires, will give better satisfaction, because the linings will withstand the heat; and while the grate bars, like boiler grate bars, will in time give out, the fact that they can be made of a substantial thickness of metal insures a reasonably long life, and they cost little to replace when worn out. They can, however, be used only in comparatively large units.

In both of these types of incinerator there is no recovery of the heat units in the garbage; that of necessity goes to waste, as also do the heat units in the coal or gas used to incinerate the garbage; consequently the burning of the garbage costs the fuel bill plus the cost and upkeep of the apparatus and the labor of the attendant.

Every hospital requires hot water, and plenty of it; and every hospital pays a fuel bill to produce the hot water it uses; therefore if the heat units in the garbage, plus the heat units in the fuel used to incinerate it, can, with the same labor cost, be utilized to produce the hot water required, the saving is obvious.

Garbage consists of various articles rich in fuel values: good animal fats, bones, and some combustible and heat-giving matter. One ton of garbage, when dry, contains as much heat as two hundred pounds of good coal; often it contains more.

In the borough of Shoreditch in London all the garbage which formerly was hauled to barges, towed out to sea and dumped at great expense has for about fifteen years back gone into a great destructor plant, where it is burned with practically no addition of coal. From it is produced electricity, which is sold at a very low figure to small industries in the borough; besides which a public laundry and bath house are supplied with hot water and light; and the net result is an income to the borough from material to get rid of which it previously spent thousands of dollars.

What can be done with the garbage of a large city like Shoreditch can be and is being done on a small scale in hospitals, hotels, and apartment houses.

A test was conducted in five apartment buildings of from six to twenty-eight apartments, for three days in each. Water was furnished at a constant temperature of 160° F. in ample quantities to supply all demands; all the garbage from the apartments was completely consumed without odor, and the average cost for coal for each apartment for twenty-four hours was 2⅖ cents. Assuming the average apartment to consist of four rooms, this means that a building containing one hundred and twelve rooms would cost 78½ cents per day for coal enough to furnish all the hot water used, besides incinerating all the garbage.

In properly constructed apparatus, of which there are several types in the market, there is absolutely no odor from the burning of the garbage.

During the past few years these hot-water producing garbage burners have been tested in various parts of the country under varying conditions of wetness of garbage and with varying quantities of it, and the consensus of opinion tends to show that in the smaller class of hospitals, especially, the matter is one well worthy the careful consideration of superintendents who wish to combine economy with complete garbage destruction.

Specifications of Kitchen Equipment.

Many hospitals have been the victims of improperly drawn kitchen equipment specifications and many more will be victimized in the same manner unless more attention is paid, by those who contemplate the purchase of equipment, to the proper drawing up of specifications upon which they ask for bids, and to the intelligent study of specifications accompanying the bids submitted to them for consideration.

Every kitchen equipment manufacturer has some little peculiarity in his construction which he emphasizes in his specifications and to duplicate which his competitors would have to go to extra expense; consequently specifications in a great many instances represent one manufacturer's specifications, and when the rival bidders put in their bids each one submits his specifications with his bid.

To the uninitiated these specifications read very much alike, and it really takes an expert to differentiate between them, although the difference in price is in most cases traceable to the difference in material and workmanship.

With the hope of furnishing a fairly reliable guide in judging specifications and furnishing the information necessary to demand explanation of obscure or uncertain descriptions of material, it is proposed to give a standard set of specifications for the main fixtures in use in the average hospital kitchen, with the why and wherefore of such specifications.

The basis worked on will be that of the highest quality and most durable construction, and with that basis to work from the purchaser of equipment can readily see to what extent the specifications accompanying the low-price bids measure up to the standard required to insure durability under the heavy strain of an institution kitchen.

Specifications should be drawn so as to confine themselves to the main points of construction which insure durability without covering small points which favor any one manufacturer's type of apparatus, because any three manufacturers may produce equally good equipment, all equally filling such a specification, yet different in some points which do not affect the durability or practical working of the apparatus.

These essentials of construction being guaranteed, the question of the lowest price can then be safely taken up; but the minute the manufacturer's specifications do not square with the basic specifications, the price cannot be considered on an equal footing, because the bid is not on the same article, and the manufacturer can be requested to show wherein his goods differ in quality.

DIET KITCHEN UTENSILS.

The following is the list of small utensils specified for the diet kitchen of the new Cincinnati General Hospital:

1 fine Chinese strainer, No. 60.
1 coarse Chinese strainer, No. 60.
12 asbestos mats.
12 small wood spoons.
6 18-inch basting spoons.
12 15-inch paddles.
1 15-inch long-handled wood spoon.
6 French strainers.
12 Sherwood strainers, No. 702.
6 glass graduated measuring cups.
24 glass jars for sugar, flour, etc.
1 Rollman meat cutter, No. 15.
6 medicine glasses.
1 glass syphon.
1 glass churn, 2-quart, No. 3797.
12 Puritan biscuit cutters, 2-inch.
12 sponge cake pans, No. 1.
1 long-handle dust pan, No. 4, Fries.
12 Enterprise whips.
1 Creamer dredge, No. 2.
2 round graters, 5-inch, No. 1532.
1 Peerless nutmeg grater.
12 Puritan muffin pans, 6 2-inch cups, No. 120.
1 Arnold pasteurizer (8 bottles).
1 pair butter pats.
1 17-inch maple bowl.
1 19-inch maple bowl.
12 hand brushes.
1 24x6 knife board.
1 knife box.
12 Rubberset pastry brushes, 1½-inch.
12 small rolling pins.
1 silver brush.
1 chair step ladder.
10 1-quart Rockingham teapots.
5 aluminum funnels, Nos. 302-3-4-5-6.
3 aluminum scoops, Nos. 433-4-5.
12 apple corers.
1 cake turner, No. 14.
2 small Sure-Cut can openers.
1 carving set.
1 two-blade mincing knife.
1 Christy cake knife.
1 cork screw.
1 Universal chopper, No. 2.
1 Chandler ice breaker, No. 1.
2 ice cream freezers, 1-quart.
2 ice cream freezers, 2-gallon.
2 ice cream freezers, 1-gallon.
10 ice cream freezers, 1-pint.
1 ice pick.
1 dozen paring knives.
1 potato masher, maple, 4-inch.
6 Hein's pressers, small.
1 aluminum tea ball.
12 Columbia flour sifters.
1 Syllabub churn, 12-inch.
6 vegetable presses, No. 2.
12 Guernsey brown and white bowls, 1-quart.
12 Guernsey brown and white bowls, 2-quart.
6 Guernsey brown and white bowls, 3-quart.
6 Guernsey brown and white bowls, 4-quart.
12 Weller custard cups, No. 7.
3 Guernsey casseroles and lids, 1-quart, No. 67.
3 Guernsey casseroles and lids, 1-pint, No. 66.
24 Guernsey ramekins, No. 3.
12 Hall shirred egg dishes, No. 2.
1 aluminum strainer, No. 912.
1 aluminum strainer, No. 914.
6 aluminum pans, No. 286.
2 aluminum jars for brushes, No. 362.
12 aluminum bake sheets, No. 799.
12 aluminum cake pans, No. 166.
12 aluminum cake pans, No. 286.
24 aluminum measuring cups, No. 180.
1 aluminum melon mold, No. 110.
24 aluminum pie pans, 10-inch, No. 284.
1 aluminum griddle, No. 389.
12 aluminum pudding pans, No. 80.
12 aluminum pudding pans, No. 71.
1 aluminum stock pot, No. 716.
1 aluminum stock pot, No. 814.
24 aluminum bread pans, No. 101.
6 aluminum 6-hole muffin pans, No. 102.
1 aluminum baking dish, No. 292.
1 aluminum baking dish, No. 167.
1 aluminum colander, No. 208.
10 aluminum double boilers, No. 940.
2 aluminum double boilers, No. 942.
2 aluminum double boilers, No. 941.
2 aluminum double boilers, No. 917.
2 aluminum double boilers, No. 919.
5 aluminum milk pans, No. 393.
2 aluminum sauce pans, No. 505.
3 aluminum sauce pans, No. 507.
2 aluminum sauce pans, No. 506.
12 aluminum sauce pans, No. 50.
3 aluminum sauce pans, No. 707.
3 aluminum teakettles, No. 117.
48 aluminum timbale molds.
2 aluminum omelette pans, No. 457.
2 aluminum dippers, No. 220.
2 aluminum dippers, No. 222.
1 aluminum coffee biggin, No. 373.
1 aluminum coffee biggin, No. 374.
1 Universal 9-cup coffee percolator (colonial).
12 aluminum bake pans, No. 95.
12 aluminum bake pans, No. 99.
12 aluminum bake pans, No. 100.
2 aluminum bake pans, No. 247.
1 aluminum shaker and strainer, No. 115.
12 aluminum cake pans, No. 91.
6 aluminum measures, Nos. 190-1-2-3-4-5.
2 aluminum wash basins, No. 228.
1 aluminum cruller pan, No. 770.
12 aluminum fry pans, No. 407.
36 aluminum diet carriers, No. 802.
1 waffle iron.
1 wafer iron.
1 16x24 heavy iron griddle, polished.
3 sink strainers.
3 soap dishes.
3 pudding molds, No. 1-2005.
1 Christy mayonnaise mixer.
1 croquette mold.
1 Savarin mold, No. 2009-7.
1 Columbia meat press, No. 30.
2 oven shovels.
1 timbale iron.
1 set larding needles.
2 bread boxes, No. 3, white.
1 culinary basket, 12-inch.
1 salt jar.
1 baking powder jar.
1 pair poultry shears.
12 8-inch spatulas.
20 asbestos holders.
10 double scale thermometers, 400° F. C.
2 garbage cans and lids, No. 8.
48 tin timbale molds.

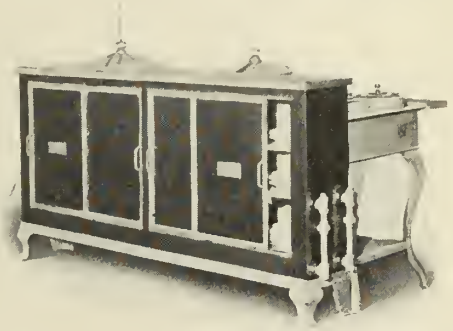
THE STEAM TABLE.

No matter of what material a steam table is constructed, the all-important thing to watch is that the water pan is thoroughly cleaned out every day, or at least twice a week. The cleaning out of the pan has more to do with the length of life of the table than almost any other factor.

The top of a steam table should be of white porcelain enamel on iron. Usually the platter and vegetable jar sections are of cast iron, enameled with German porcelain enamel, which does not discolor and is exceedingly tough. These platters are made for roasts, with or without depressions for gravy, and there are narrower platters for fish, and panels with round holes to contain the porcelain vegetable jars; also narrow panels to contain gravy boats, or, preferably, small porcelain jars for the gravies.

The part of a steam table which wears out is the water pan, and this may be constructed of various materials.

The action of hot water and steam upon metals causes rapid deterioration unless the metals are kept clean. There are various metals from which steam table pans can be made. One of these is monel metal, which contains 74 percent of nickel, 5 percent iron, and 20 percent copper, and is non-corrodible and, therefore, practically indestructible. This, however, is very high priced, and very hard to work, consequently causing a high labor cost in construction, for which reasons it has not come into general use, although it is the ideal metal for the purpose.



Another metal, the favorite for steam tables, is copper; but a thin copper pan inside a steel pan is to be avoided, because any slight leak will cause a deposit of wet to cover the steel below and rapidly rust it out.

In specifying a copper pan for a steam table care must be taken to specify the weight of copper. "Heavy copper" means nothing; "forty-ounce copper" means that and nothing else, and no first-class steam table pan should be constructed of much lighter gauge copper. Too many specifications omit the gauge, consequently the bids are not on uniform material and the gate is open to too light gauge material. The water pan should be seven and one-half inches deep, because this depth will prevent the overflow of water when boiling. Shallower pans are to be avoided for this reason.

A very satisfactory form of pan is made from strictly charcoal iron; this is much more satisfactory and will wear better than a light gauge copper pan. This iron will stand steam and is stiff and rigid enough to make braces unnecessary. Fourteen gauge iron is sufficiently strong for the purpose, but steel should never be used, as it rapidly rusts out. A copper pan should be mounted on an angle-iron frame, with angle-iron braces every four feet under the pan to stiffen it; these braces, however, are unnecessary in the charcoal iron pan.

The lower portion of steam tables should not be used for plate warmers, because such warmers are always dirty, difficult to get at and keep clean; a better form of warmer is one placed in front of the steam table, the top being used for a service shelf.

The following specifications would be safe for steam tables:

Steam table: —— long and —— wide, exclusive of carving boards. (The standard is usually 24 in. wide.)

Water pan: —— feet long, 7½ inches deep, fitted with 1-inch cleanout connection and steam coil (copper, brass, or iron), and constructed of 16 gauge monel metal, or 40-ounce copper, or 14 gauge charcoal iron, painted two coats metallic paint inside. Top of table fitted with —— meat platters, —— gravy panels, each containing two gravy boats (or three porcelain jars with copper covers), one soup panel, —— vegetable panels, each containing two steam-tested porcelain vegetable jars, with copper covers. Panels to be of cast iron, fitted with water rims, and enameled with the best quality German porcelain enamel. All panels to be removable.

Table to be mounted on cast-iron legs and to have galvanized iron plate shelf below. Maple carving board 1⅜ inches thick and 8 inches wide to extend entire length of table on both sides.

In estimating the length of a steam table, the meat panels and soup panels may be taken at 18 inches each; the vegetable panels, each containing two vegetable jars, at 12 inches, and the gravy panels, each containing two gravy boats or three gravy jars, at 6 inches each.

Different firms vary slightly from these dimensions, but the average will be near enough. Thus, three meat, one soup, two gravy, and two vegetable panels would mean a table nine feet long. For carving purposes one or two joints can be placed in each meat panel.

Some specifications call for the copper pan to be tinned inside. This is entirely unnecessary, as the tin soon wears off, and, while it looks pretty when new, is of absolutely no practical value and increases the expense.

Don't mix your medical care of patients with your finances. Don't let your doctors have anything to do with their patients' bills. It is all right to ask a doctor about the financial condition of his private patients as a mere matter of information; but don't accept a doctor's guarantee of a bill, don't allow him to collect a bill, and don't let him fix charges or have any part in the financial operation. These mixed relationships are not only bad precedent as a matter of administrative principle, but they are sure to lead to regrettable incidents. Some day a patient whose bill has been guaranteed by a doctor will fail to pay. If you call on the doctor to settle, he is sure to resent the request, and you will make an enemy of him, or, at best, a very lukewarm friend. It is all right for a doctor to engage accommodations for a patient, because it is the convenient way, and he will usually know what he wants for the patient, and what the patient can afford; but always treat such negotiations as merely tentative, and take the matter up with the patient or his friends before settling it finally. Many doctors like to be a part of the financial arrangement with their patients, and a good many of them will actually collect the fees for you. But suppose they want you, in turn, to collect their fees; where does it leave a self-respecting administration? If you fix a definite policy in this matter, the medical profession will fall in with it gladly, and will eventually appreciate the freedom it gives them.

Dr. Thomas S. Potts, superintendent of the Baptist Memorial Hospital at Memphis, Tenn., for the last five years, severed his connection with the hospital January 1, to resume evangelistic work. Following Dr. Potts's resignation a new administrative plan for the hospital was adopted. The institution will now be under the control of an advisory board, with Mr. P. C. Wilkes as active manager.

AMERICAN HOSPITAL ASSOCIATION

TO BOOM THE SAN FRANCISCO MEETING.

Secretary Boyce Issues First Call for Big Attendance at First Pacific Coast Convention.

Secretary H. A. Boyce, of the American Hospital Association, has fired the first gun in the campaign to get out a large and representative attendance at the San Francisco meeting. His circular letter is as follows:

The next meeting of the American Hospital Association will be held at San Francisco, June 22, 23, 24, and 25, 1915.

Doubtless this will be the greatest hospital convention ever held.

Trustees should arrange to have a representative at this meeting. By all means see that your superintendent attends. It will pay your institution to provide for his expenses.

The Association has for its object the promotion of economy and efficiency in hospital management. Thousands of dollars of public money are being saved each year because of suggestions for improvement and economy learned at these meetings. Has your superintendent ever had the privilege of listening to the ablest hospital administrators discuss questions which are of vital interest to small as well as large institutions? Indeed, the majority of the discussions at these meetings refer to small hospital problems.

The transactions of the St. Paul convention are just about completed. This report contains about five hundred pages of matter pertaining to institutional care of the sick. In fact, every phase of hospital work is discussed. As soon as you read this notice send your application at once and receive a report of the St. Paul convention.

Grading of nurses, hospital architecture, cost accounting, hospital housekeeping, and hospital morbidity statistics are among the number of important subjects contained in this report.

The following extracts from the constitution and by-laws indicate who are eligible to membership:

"Active members shall be those who at the time of their election are trustees or executive heads of hospitals."

"Associate members shall be those who are executive officers of hospitals next in authority below the superintendent, contributors to or officers or members of any association the object of which is the foundation of hospitals or the promotion of the interest of organized (medical) charities, hospital physicians, surgeons, pathologists, and superintendents of nurses."

"All applications shall be in writing, and shall be endorsed by one or more members."

"The annual dues of active members shall be $5.00; the dues of associate members shall be $2.00." (Kindly send amount of dues with application.)

The initiation fee is $5.00. This amount covers the first year's dues.

Do not forget that the next meeting is at San Francisco. Special rates will obtain on all railroads. This will give an opportunity for every hospital superintendent to attend this important convention.

The American Medical Association meets at the same time, and the great Panama Pacific Exposition will be in full swing then.

It is hoped that everyone eligible to membership in the association will forward an application to Dr. H. A. Boyce, secretary, Kingston, Canada, at once. Come along, fellow-workers, let us build up our hospitals and at the same time boost the greatest hospital organization in the world!

THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. IV *March, 1915* No. 3

THE WINIFRED MASTERSON BURKE FOUNDATION—CONVALESCENT GROUP

Discussion of the Problem of Convalescent Homes as Adjuncts to General Hospitals—Some Experimental Architecture—Economy Necessary, but Not at the Expense of Attractiveness—A Summary of Principles

By T. J. VAN DER BENT,

OF McKIM, MEAD & WHITE, NEW YORK

THE plans which are published with this paper will not need much further explanation. It was the desire of the founder to build a convalescent home for deserving poor in a simple but dignified manner, without extravagance, but of durable construction. When completed the group of buildings will form a combination of gardens, buildings, and courts, with numerous loggias, covered passages, and many features which affect open-air treatment.

Outside occupation and work in the open air can be provided, as well as work inside the buildings, and as much variety as is practical and beneficial. Only after proper experiments and careful observations will the type of work and the best manner of recreation be selected.

At present only the administration building, the superintendent's house, the hospital, the dining hall and servants' building, the boiler and power plant, the laundry, four cottages, and the central quadrangle of passages have been completed. When the result obtained with the cottages to the west warrants, after some time, the construction of more buildings of the same type, those to the east will be erected. If experience, however, proves the value of other arrangements, the eastern cottages may differ materially from the western.

It may be found good practice to erect larger dormitory quarters, with bed rooms for six, eight, twelve, and more patients. The individual occupation of bed rooms may be found impracticable and it may be better economy to use dormitories of larger size. Only experiments will establish the most advantageous methods.

The plans of the cottages show a first and second floor dormitory, each with an ordinary capacity of ten beds per floor, and an emergency total capacity of thirty patients. The eight cottages to the west and east would contain, therefore, a total possible capacity of two hundred and forty patients, while the two larger dormitories to the north and south would contain not less than eighty each, which would bring the total capacity of the institution to four hundred patients.

If time proves that it would give greater satisfaction to extend the benefits of the institution to a larger number of patients, the plans of the four cottages to the east may be altered to such an extent as to make room for two hundred additional patients.

Only the first floor of the administration building is indicated, the upper floors being used for the staff, bed rooms and sitting rooms, quarters for the head nurses, and dormitory quarters for several of the higher grade of help. In this building a great many patients can also be housed temporarily.

The little hospital has a capacity of twelve beds. I have carefully refrained from calling the institution a hospital. The term "convalescent hospital" is a misnomer. Those who should have the greatest benefit from the institution should not be reminded of the hospital. If the admitting office connected with the institution does its work in a proper manner the little hospital should be very

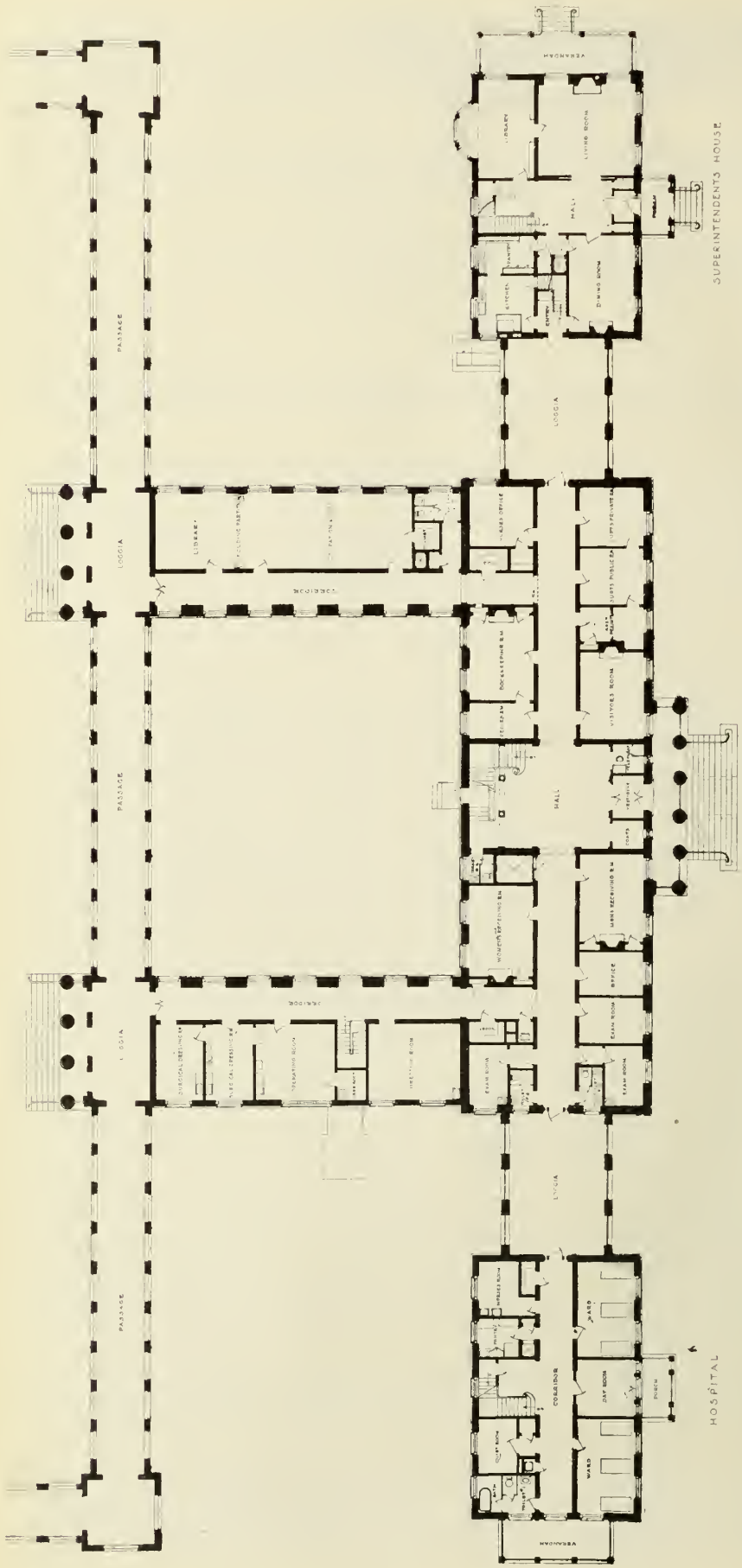


Fig. 1.

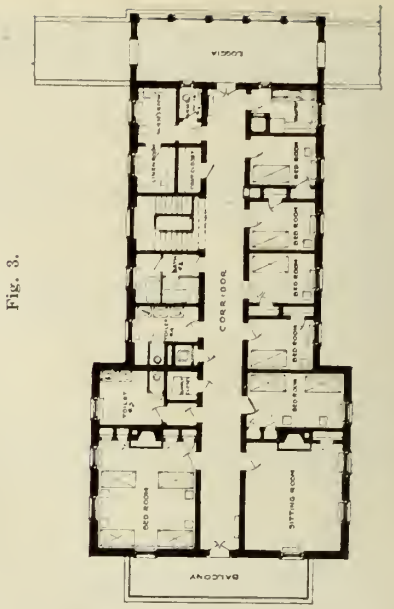


Fig. 3.

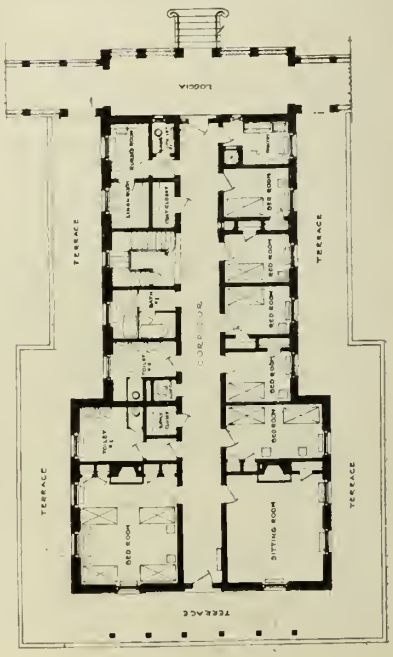


Fig. 2.

BURKE FOUNDATION—CONVALESCENT HOME

Fig. 1. Plan of administration group, with hospital and superintendent's house.

Fig. 2. Typical cottage, first floor.

Fig. 3. Typical cottage, second floor.

Fig. 4. Bird's-eye view of the Burke Foundation Group, Convalescent Home, at White Plains, New York.

seldom used, and after a short time may be renamed and used as a cottage for a certain class of convalescents.

The superintendent's quarters are in a separate building, a roomy, dignified house sufficiently isolated, but still affording direct connection with the administration quarters.

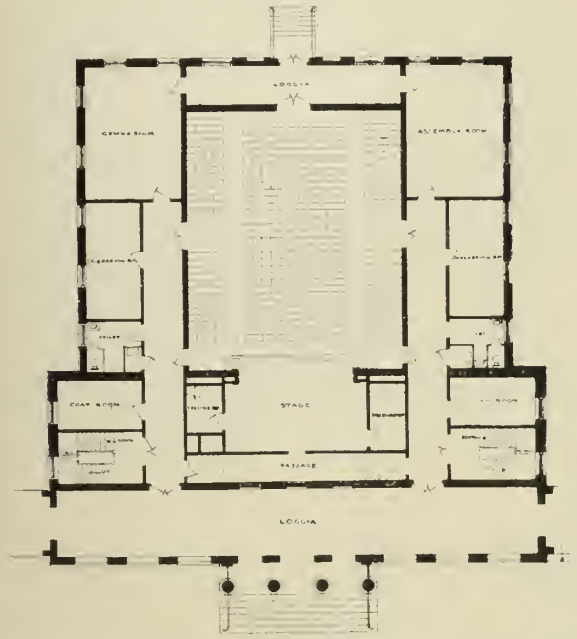


Fig. 5. Burke Foundation, Convalescent Home. Assembly building, first floor.

All cooking, except that for the superintendent and his family, is done in the dining hall building, and all meals are taken there. Separate dining rooms of various sizes are located on each side of the kitchen, which forms, as is natural, the center of the distribution of food. From this center the food reaches the service rooms on each side and from these service rooms it is brought into the various dining rooms for patients, for doctors, and for nurses, and for male and female help of different kinds. In addition to the kitchen and dining room arrangement, this roomy building contains dormitories for a great part of the female help.

The boiler house, located immediately behind the kitchen building, has a very adequate boiler plant, power plant, refrigerating plant, and an exceptionally large coal storage. This coal storage is divided into several isolated bins, so as to diminish the possible damage by fire, which is more frequent when soft coal is used, as is the case here.

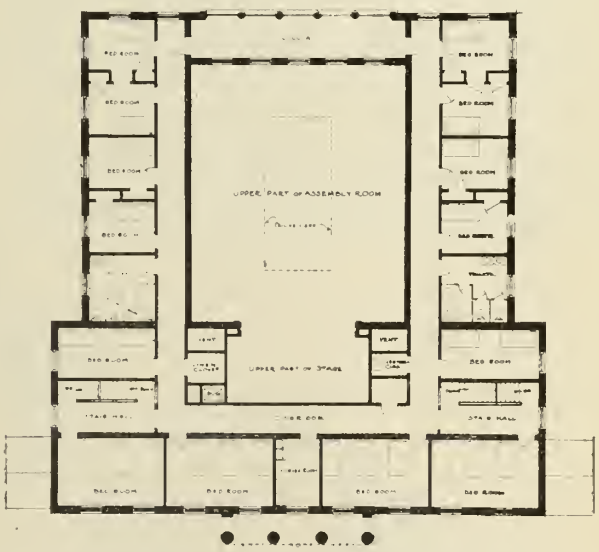


Fig. 6. Burke Foundation, Convalescent Home. Assembly building, second floor.

The laundry, as will be seen from the plans, offers a very condensed and direct means of

Fig. 7. Burke Foundation, Convalescent Home. Dining hall and service building.

handling soiled linen, mattresses, etc., of patients, help, doctors, and nurses. The handling goes on in a continuous manner, the goods passing through without steps being retraced.

The nurses' home, as planned, will offer living quarters and recreation rooms not only for the nurses, but also for the female patients; whereas the entertainment building, also to be constructed in the future, will contain similar rooms for the male patients, in addition to some quarters for male help, and a large auditorium. In this connection it is to be greatly regretted that this essential feature of a convalescent home—the entertainment building—could not be erected at the same time as the first group of buildings.

It will be found that the plans give complete information as to the distribution of the different parts of the institution and their functions.

In closing, I wish to make an appeal to the readers of THE MODERN HOSPITAL for the increase of the number of convalescent homes in the United States.

Institutions for convalescents are scarce, notwithstanding that their great value has been acknowledged by all doctors. The necessity for the need of these institutions is becoming more apparent every day through the steady increase of shortage in bed capacity of the regular hospitals. The increase of bed capacity does not keep pace with the rapid increase of population and stays far behind the increased demands of modern times.

The use of hospitals does increase not only with the growth of the country; not only with the progress in medicine and surgery, but also with the greater confidence of the people in the admin-

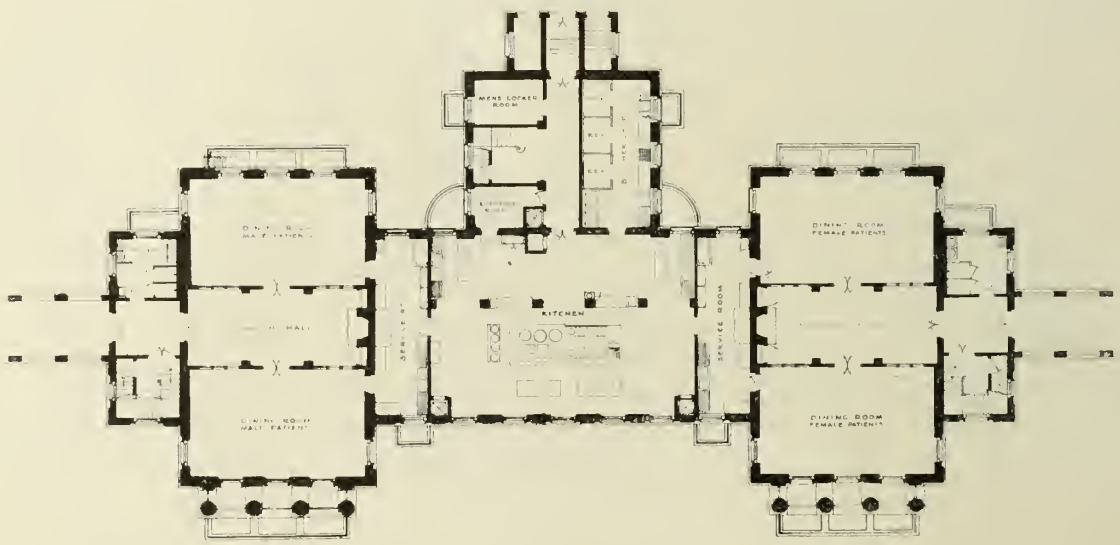


Fig. 8. Burke Foundation, Convalescent Home. Dining hall building, first floor.

Fig. 9. Burke Foundation, Convalescent Home. Superintendent's house.

istration of modern hospitals. While formerly a hospital was considered a place for the poor man, for those who could not pay for even the least expensive medical advice, and everyone was afraid of a hospital, at present it is considered the best place for the sick. And this is for many reasons: not only on account of the better nursing, and the better and more efficient treatment, and the lessened interference from outside influences, but also because the household is freed of the enormous burden which the care of the convalescent places upon it. The often depressing influence the sick may cause to the household and their interference with its management is eliminated by the hospital treatment.

The shortage of bed capacity in the regular hospitals often leads to the discharging of patients at the earliest possible time, in order to make a place for those who are in greater need of hospital treatment. This early discharge of convalescents is a necessity for the hospital and should be of benefit to the patient. The hospital atmosphere is no longer to his benefit. Other and more pleasant surroundings are needed. The patient is not fit, however, to go home and return to his regular occupation. He cannot, as yet, stand the fatigue and strain of his work. If he is sent home from the hospital the natural result is that he will attempt to take up his work, although unfit, and the consequences of this may be fatal in some cases, in other instances may cause a crippled condition for the rest of his life, and in every case will retard his complete recovery, to say the least.

The problem of finding a place for the convalescent which will put the last and final touch to his complete restoration to health is extremely difficult. The improving of the patient to normal

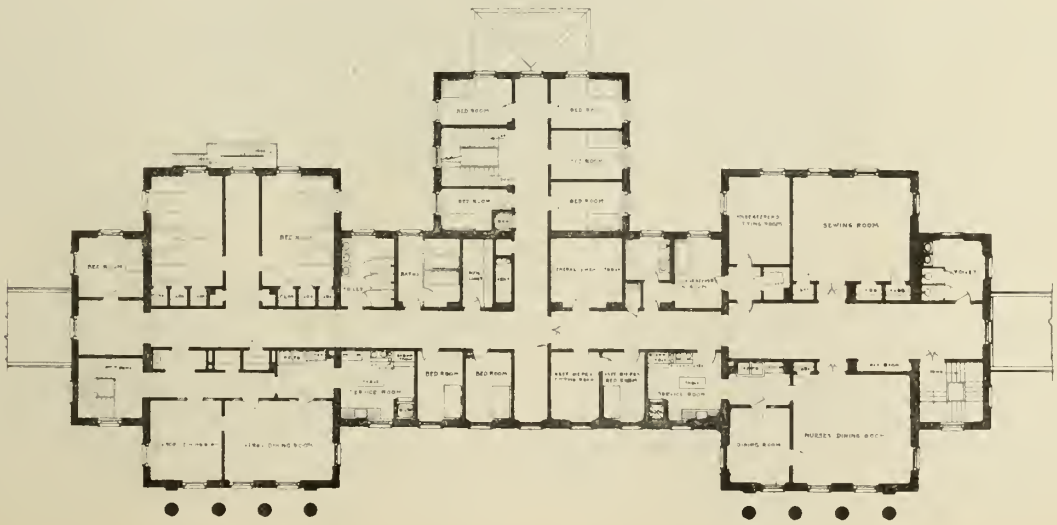


Fig. 10. Burke Foundation, Convalescent Home. Dining hall building, second floor.

condition and his return to health, is accompanied, in most cases, by a very curious symptom. It is often said "the patient is grouchy and dissatisfied with everything, a proof that he is getting well." What the real cause of this irritable condition is has not been carefully studied, but we must consider the fact in our treatment of convalescents, and it is one of the great problems in the planning of convalescent homes. This problem can be solved only by experiments along different lines.

The entire problem of convalescent homes is, as yet, in the experimental stage, and it would be a great mistake to lay down cast-iron rules as to their planning and management. The Burke Foundation is also an experiment, and as such, the finished part of the institution only a beginning, a combination of different experimental stations. With more definite knowledge as to the proper treatment and the manner of obtaining the best results, several additional buildings on the same lines, or on different principles, according to experience, will be constructed.

Without assuming too much, it may be considered as proven that the following problems constitute the special features of a home for convalescents:

1. Separation of sexes.
2. Separation (perhaps partial) of adults and children.
3. Simplicity of administration.
4. The proper amount of classification of patients. This will lead, perhaps, to the separation of white and colored races; and of patients recovering from one form of disease from those who have suffered from other ailments; and of placing together, as much as possible, certain elements which are congenial and which find benefit from each other's company.
5. Occupation of patients.
6. Recreation, including a certain amount of exercise and sport.
7. A certain amount of separation in dormitory quarters.
8. A certain amount of separation at meal times.
9. The attempt to replace such portions of home life which the patients are apt to miss most.
10. Avoidance of monotony of the regular and typical institutional life. A certain amount of variety in everyday occupation and recreation.

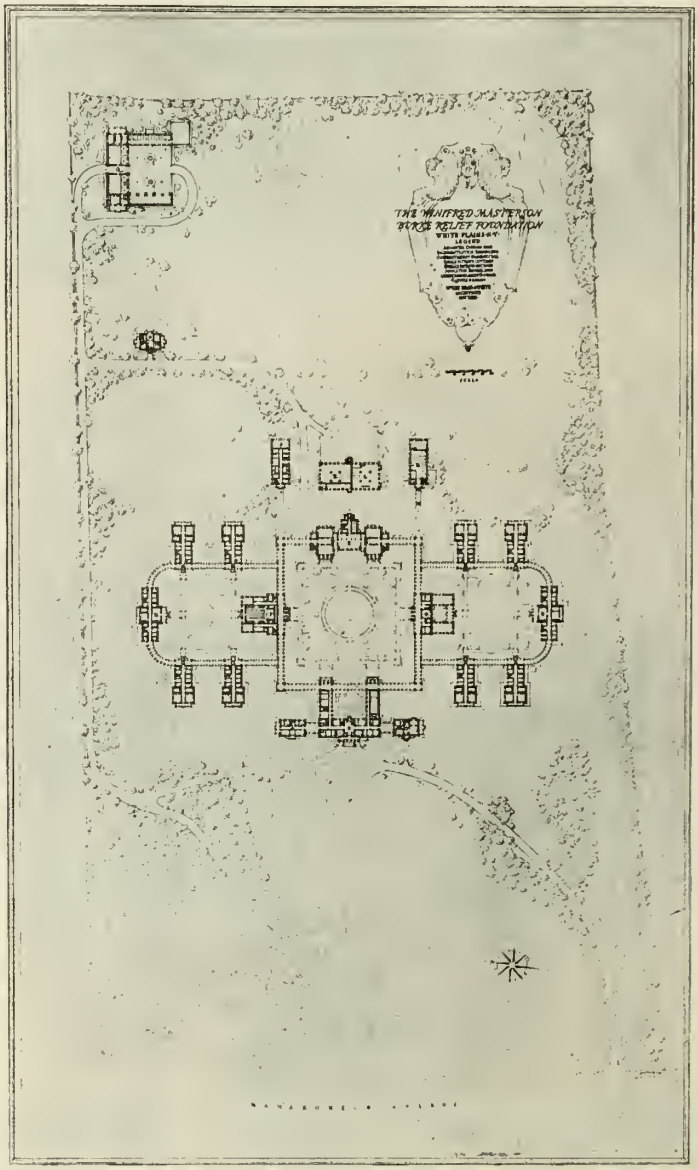


Fig. 11. Burke Foundation, Convalescent Home. Plan of the group.

Although the convalescent home is in the experimental stage, there is no question about the immediate need of such homes in connection with all general hospitals. As a relief method and a method of preventing relapse and return of patients to the hospital, they are an absolute necessity of the present time.

They should be advocated in every community as an annex to the general hospital and as a part of its system. They should be constructed as economically as possible, without, however, losing sight of the great difficulties which exist in restraining convalescents from returning home or going to work.

The strong desire of all convalescents to return to their own home and to take up their regular work must be met by the attractiveness of the convalescent home. It will take a little more than just the knowledge that it will do him good, to offset the desire of the patient to return to his usual surroundings, to his home circle or to his place of business. It may also be that the patient has a strong dislike for any kind of institutional atmos-

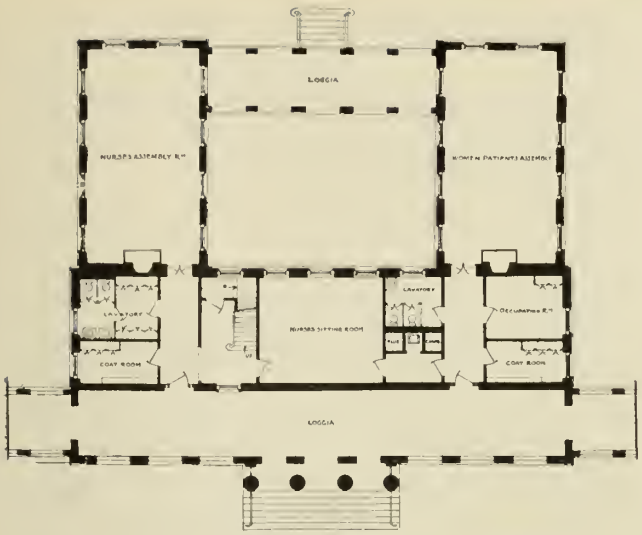


Fig. 12. Burke Foundation, Convalescent Home. Nurses' home, first floor.

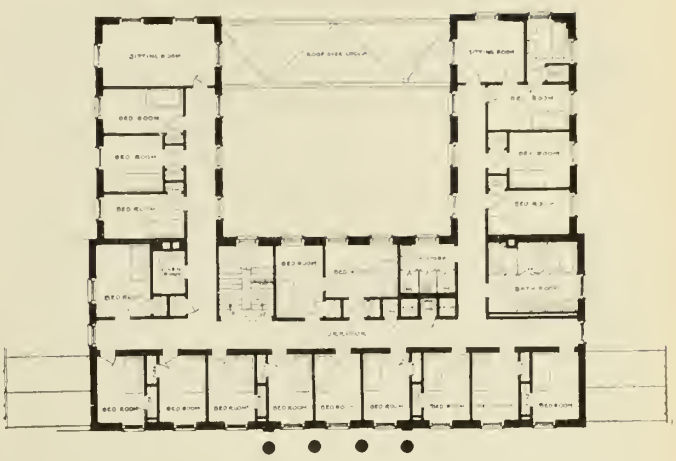


Fig. 13. Burke Foundation, Convalescent Home. Nurses' home, second floor.

phere; thus, although we should build cheaply and economically, if we do not take care of the above we may build too cheaply, and the convalescent home may be of little or no use, and those for whom the place was created will refuse to enter.

The patient should consider a stay in the convalescent home not a duty forced upon him, but a pleasant vacation, and for this reason the home must have a great amount of attractiveness. This cannot be obtained if economy leads to too cheap building, to the construction of barracks or prison-like buildings. While good economy is of the greatest benefit to the institution and will extend the scope of its beneficial work, false or mistaken economy will result in absolute failure of the work.

The reputation of the institution will insure or prevent its success. It seems that the time is ripe for a campaign for the erection of convalescent homes wherever needed, a campaign for the relief of the general hospital and its necessarily more expensive treatment; for the obtaining of better results than records of returning patients and relapsing convalescents will show at present.

Notwithstanding the above remarks, the convalescent home can be constructed so much more cheaply than the regular hospital, and its benefits are so great, that such a campaign, entirely aside from the charitable and humanitarian character, may put us a long step forward in the fight against disease, and in the struggle for a healthier, stronger, and less crippled race.

ORGANIZATION OF THE BURKE CONVALESCENT HOMES

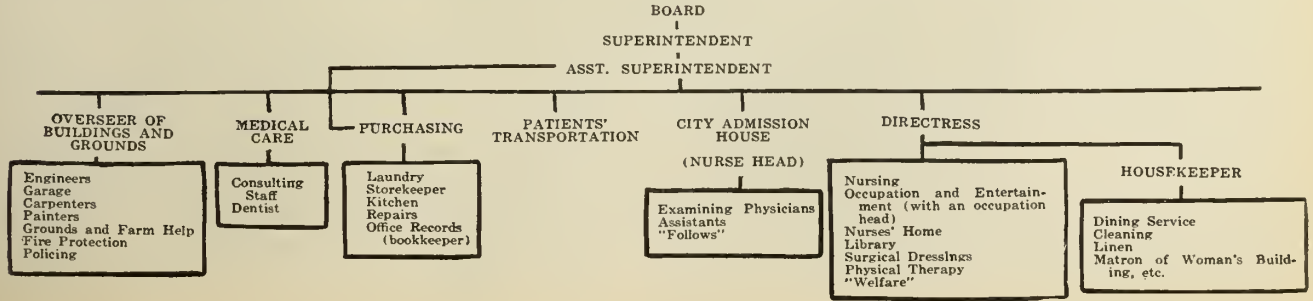
Scheme That Contemplates an Understudy for Each Department Head—Personality Dominates

BY FREDERIC BRUSH, M. D., SUPERINTENDENT

Many ideal schemes of institution organization are printed each year. One wonders whether they are ever tried out, or even attempted, in the form in which they are written. The institutional schemes already tested and in operation would doubtless be more instructive than these newly hatched ones.

Here is the plan which is being put into operation by the Burke Foundation for Convalescents at White Plains, New York. It will inevitably be modified and rebuilt around the personalities of those who carry it on. Persons have a way of breaking up diagrams—as they should.

All main heads have understudies. The housekeeper is a nurse, is under the directress, and becomes her assistant. Outlying farms and properties of the Burke Foundation justify the important position of the overseer of buildings and grounds; he is a graduate engineer. Local physicians make up the small consulting staff. The superintendent is the resident physician, and later will need an intern assistant. Cardiac consultants will be appointed, as the cardiac convalescents are to be admitted through special examiners. The few main heads are well salaried and cover wide fields. Additions to the force will therefore for a long time be in the lesser lists.



FEEDING THE HOSPITAL—THE CLASSES OF PEOPLE TO BE FED[1]

Surgical and Maternity Cases—The Interns and Nurses—The Hospital Employees—Making Out the Menus—Food Carts—Food Containers—Serving Pantries—Diet Training for Nurses

By LULU GRAVES, Dietitian Lakeside Hospital, Cleveland, Ohio

PAPER VII

THE diet is not so vital a part of the treatment of surgical and maternity cases as it is of medical cases, but indirectly it is an important phase of their treatment in the hospital. As a rule, these patients have good appetites and probably unimpaired digestion, and the need is not so great for exercising care to prevent them from eating the wrong thing. After the first few days precaution may be needed to prevent their eating too much. Frequently these patients, especially surgical cases, want a great deal to eat, or perhaps want to eat often because that is practically the only break in the monotony of the day. They should be urged to spend a long time at their meals—to eat slowly and masticate thoroughly. This lessens the danger of overtaxing the digestive organs and at the same time gives the patient a more satisfied feeling. Eating bulky foods, such as fibrous vegetables and fruits and large bowls of soup will also help in the same way; both of these measures will aid in preventing constipation, which might otherwise result from overeating and inactivity. The patient should be made to understand that a serious derangement of nutrition may be brought about by clogging up the system with more food than the body can oxidize or in other ways take care of.

It is common for patients—paying patients—to comment on the fact that they eat much more than they have ever done at home. It is evident that many of the private room patients in our larger modern hospitals are overfed. They are served an adequate menu by the house, and many extras by their friends. If they fail to consume all of this food their condition is considered by these friends more or less serious, and they bring a greater variety of things in order to tempt the appetite of the patient.

We do have many patients, however, who, for one reason or another, do not eat a sufficient amount of food. In some instances this may be due to a prejudice against institutional food or cooking; in more instances it may be due to the length of time the patient remains in the hospital. His inactivity leads to a loss of appetite and dissatisfaction with the food. Efforts should be made to induce these patients to take sufficient nourishment in some attractive form. An effective method is to serve some new dish, or to serve things in a different manner than has been previously done; to combine the needed food materials in novel ways, and to give the meal the nature of a surprise. Even well people enjoy the pleasures of anticipation of food, and this is far more true of the sick. Almost invariably they enjoy a meal more if there are elements of expectation and surprise connected with it. This is one reason for not having routine menus—a particular thing on every Monday, another on every Tuesday, and so on. Neither is it well to discuss the menu with the patient; an observant nurse can soon learn the things a patient will not eat, and avoid serving him things which are distasteful to him.

This brings up the question of "special orders" for patients; to just what extent shall we cater to the whims of a patient and just how much latitude can we give his wants? Not only should the line be drawn, but there should be a complete disregard of two prevailing reasons given for special orders in many of our hospitals—namely, "My patient is paying seventy-five or one hundred dollars (as the case may be) per week and is thereby entitled to these little extras," and "The doctor said he could have anything he wished." These statements are being met in each individual hospital according to its conditions and resources, but they are entitled to no consideration in any of them. This shows plainly another need—cooperation between the physician and the dietitian.

At Lakeside we have reduced the special orders to a minimum in the private and semi-private wards by putting out a menu which gives a rather wide variety of food. For instance, for breakfast there is a choice of fruits, two cooked and two "prepared" cereals, bacon and eggs, toast, rolls, and at all meals any of the common beverages may be chosen. For dinner there is a choice of a clear soup or a cream soup; a roast meat, or steak, or egg in any form; a baked potato or one prepared in some other way; two other vegetables; a salad; a frozen dessert, or some other kind; and we vary the menu as much as possible so that there shall be no monotony in the diet. If the patient still desires something which requires extra preparation there is an extra charge for it. It is not often that a patient cannot select enough

[1]This is the seventh in a series of papers on "Feeding the Hospital." Last month appeared "The Various Kinds of Foods," continued from January; next month will appear "Food Problems in Different Kinds of Hospitals."

from this menu to give him a satisfactory meal, even though there are some things being served which he does not care for.

The number of servings required in each ward is reported to the dietitian, and she posts it upon a bulletin board in the kitchen so that the cooks know just how much is to be prepared. This type of menu makes a little more work for the dietitian and the kitchen force, but not a great deal more than would be necessary in the preparation of many special orders; and it has the advantage of giving every patient the same privilege; while by the other method the number of "extras" a patient gets depends about as much upon the kind of a nurse he has as it does upon his actual requirement.

As a rule, maternity patients have very good appetites and with them, too, there is sometimes a tendency to overeat. This desire for large servings, or frequent serving, has been explained occasionally by saying that they must eat a great deal because they are eating for two people—though just how or why this is the case I have never been able to learn.

There has been a theory in the past that a mother should not eat acid foods or foods with a strong flavor during the early period of the child's nursing; it has been very satisfactorily proved, however, that the child is not affected by the diet of the mother so long as she confines herself to the things which for her are easily digested; and there need be no change in her method of eating provided her powers of assimilation are the same.

FEEDING THE INTERNS AND NURSES

Is it making too strong a statement to say that probably nowhere in the world will one find a class of people more critical of their food or more difficult to please than nurses and interns? We have some very good psychological explanations of this, but the critical attitude of these people remains much the same, and it seems to be pretty general in hospitals throughout the country. They almost invariably enjoy the food when they first enter the hospital, but sooner or later add their complaints to those of the earlier comers. Undoubtedly there are some instances where complaint is justified, but in many of the hospitals of my acquaintance the food is as good in quality and as great in variety as is to be found in the homes of people in a similar walk of life.

Much depends upon the resources of the hospitals, of course, yet it must be remembered that the food is cooked in large quantities, and must be cooked long enough before serving to allow time for it to be transferred to carriers of some sort, taken some distance, and made ready to serve to a number of people, and it is not possible to give to it the same characteristic flavors that may be acquired in a home where there is practically no time elapsing between the cooking and serving process. Then, again, where so many tastes are being catered to one must confine herself to neutral seasonings and mild flavors.

Hospital people work hard and meet great demands upon their physical force, and should have food which will rebuild tissue and furnish energy; their work is indoors, however, so their power of oxidation is not so great. The nature of their work and their environment unfit them for digestion of concentrated or heavy foods, or of much fat. For this reason meat three times daily, though that is one of the most common demands, is not desirable, and rich puddings or pastry should be given sparingly. The mode of life of the hospital operative is conducive to constipation, so fruits, green vegetables and salads should be served as much as possible. Now that we have good brands of dried, preserved and canned fruits which may be made most palatable, fruit is not beyond the reach of any hospital. Apples, bananas, dates and figs are not expensive and make splendid combinations with cereal for breakfast, or may be used in salads, or in desserts for luncheon; apples and bananas when baked or fried may serve in place of a vegetable, or may be inexpensively made into fritters. This year oranges and grapefruit have been so moderate in price that the fruit question has been an easy one.

Cereals, including rice, macaroni and spaghetti, are staple hospital food materials, but are generally scorned. They are, nevertheless, desirable substitutes for meat, not only because they cost less money, but because they have much food value, are easily digested, and furnish bulk, which indoor workers need in their diet. When well cooked they can be made very palatable, and are susceptible of so many combinations with other food materials that they give much variety to the menu. Cream soups, purées and chowders have high nutritive value and are most appetizing luncheon dishes; the lighter forms of meat, like bacon, liver, stuffed calf hearts, tongue, hot or pickled; cheese in an almost endless variety of forms (such as fondue, creamed cheese on toast, cottage cheese salad, or cheese on potato, rice or macaroni); macaroni and fritters, already mentioned; and the salads which lend themselves to so many ways of serving—all may be utilized to good advantage for the lighter meal of the day and are not too expensive for the hospital of limited means.

It is better, if possible, to serve luncheon at noon and dinner at night. The nurses are more fit for the afternoon work if not digesting a heavy meal while trying to concentrate on their duties.

Dinner, being the main meal of the day, is the one over which we like to linger just a little; and it is highly desirable that the food be so well prepared and served that it will not intrude itself upon the conversation, as it will undoubtedly do if it is not pleasing.

The nurses and doctors are entitled to the best that the hospital can afford to give them; it is but small return for their best service, which is given to the hospital. They should have plenty of food of good quality, cooked and served as well as can be done in the hospital. They, as well as the patients, base as much of their satisfaction with the hospital and their life in it upon the food as upon any other feature. Only when people are happy and contented can they give of their best work. We may not in our time reach the point of feeding the people in a hospital to their satisfaction, or to our own satisfaction, but we can make the best of all available material; and even though we must use the same things repeatedly, they can be used in enough different ways to prevent unappetizing monotony. It is, indeed, disheartening to look ahead for a year and know that you are going to have the same thing every morning, or every Monday or Wednesday, during the whole stretch of time. Nor is there any economy in that method; it leaves scant opportunity to utilize stock on hand. There will always be food in the ice box or store room which cannot wait until the prescribed day for it to be used.

FEEDING THE HOSPITAL HELP

Then we have the problem of feeding the "help" of the hospital. The chief difficulty in feeding these people, I find, is to convince them that you are interested in their meals as well as in the other food of the hospital. When they know that the selection and preparation of their food is given care, and that they are not receiving only that which is unavailable for the other people, they are not likely to make complaints. It is a great mistake to allow a great deal to be left over from other parts of the house, and to use it up on the help. In the first place this is extravagance; in the second place it gives them the impression that they are being fed upon scraps.

The "help" must have plain, substantial food and plenty of it. They do not care for "fancy dishes" and as a rule do not demand as much variety as the other inmates of the hospital. This does not mean that they may be given the same things again and again day after day, but a reasonable amount of variety is usually satisfactory.

MAKING OUT THE MENUS

In the making of menus there are many things to be considered which, to an outsider, may seem of minor importance, but which count for much in getting out meals. Everyone recognizes the fact that the buying must be governed by the funds available for the commissary department, but not everyone is familiar with vast differences in markets, their methods of filling orders and their facilities for delivering. The length of time to be allowed in advance in making out menus depends almost entirely upon the market's delivery system. The number of employees in the kitchen and their competency modifies the menu very much, as does also the kind of equipment in the kitchen. Naturally the better manned a kitchen is the more effectively can the work be done. It is no economy to employ an unskilled cook at a low salary. The best results cannot be obtained when the kitchen force is so limited that everyone is working up to the limit of his capacity all of the time. In no other part of the house are the hours so long as in the kitchen, nor so rigid in that the work must be done by a certain time every day, with no possibility of leaving some of it over for another day; yet it is very seldom that the kitchen department is given the same consideration and its system or regulations shown the same respect as is accorded other parts of the house.

Our present system makes it necessary for our menus to be made up three days in advance. Therefore we very frequently find it necessary to change them when the day arrives, as we find something in our store rooms which should be used, or find that what we planned could not be found in the market that particular day in as good condition as we wished, or discover some other reason for substituting another article of food.

Another problem which seems almost to have baffled solution thus far is the conveying of food from the kitchen to the various serving pantries in such a manner that the hot things will be hot and the cold things will remain cold, and everything be in proper condition when it reaches its destination.

FOOD CARTS

There are food carts with devices for keeping food hot by means of hot water compartments or other heating devices, but these do not provide for the foods to be kept cold; besides, they are very heavy, even when empty, and when loaded with food are often too much for one man to manage. The German Hospital in New York City has a cart with compartments for different foods and for the necessary dishes; this is taken into the ward and instead of serving from a pantry the serving is done from the cart with a minimum handling of materials, and no waste of time in the ward. This necessitates, however, a cart for every ward and a very efficient elevator service; and there will be

some complications in getting these carts filled and out of the kitchen, unless the arrangement of the kitchen space is well adapted to the use of the large number of carts.

If a cart could be built with compartments for both hot and cold foods, with insulated partitions between, or shelves, simple in construction and with few complicated parts to get out of order, and light enough to be drawn by a man, it would fill our needs.

The Elwell Parker Electric Co., of Cleveland, are putting out a cart which has these insulated shelves and compartments for hot and cold food, but it is built only in connection with and for use on their electric motor truck. The price is $1,100, or $1,200, so it would not be practical unless it could be used for delivery in all departments, as not many hospitals would feel justified in spending that sum for the delivery of nothing but kitchen supplies. Food containers of heavy pressed tin, or copper or aluminum, with insets of the same material and devices for surrounding these insets with hot water, are perhaps as satisfactory for keeping food warm as anything in general use. These containers when sent out in closed carts will keep food sufficiently hot for a reasonable length of time; but they are disastrous to gelatins or salads that happen to be sent out at the same time, as is usually necessary.

FOOD CONTAINERS

These food containers are better in the serving pantries than a steam table, provided there is stove space enough to permit of their being placed over a flame. In transferring the food to the steam table insets, time is lost and the extra handling detracts from the appearance of the food. Serving pantries are usually small, and the heat from the steam table makes the room very uncomfortable for the ones doing the serving. Then, too, the warm, moist atmosphere of the room makes it impossible to allow the salads and cold desserts to remain in the room even during the serving time, and not many of our serving rooms have sufficient ice box space to accommodate these things. It would be very convenient to have one section of the refrigerator built with many shelves just far enough apart to permit dishes filled with salad or dessert ready to serve to be placed on these shelves and taken out only as needed. All too many ice boxes do not have enough shelf space, but do have too much waste space between the shelves.

SERVING PANTRIES

Serving pantries should be provided with shelves or racks with space enough to permit all trays to be set with the necessary dishes before serving begins. The more expeditiously the serving can be done, the more palatable will be the food. With the trays all set and the cold things all served and in the ice box, the process of getting out the trays may be a very simple one. With some patients the appearance of the tray may determine whether or not the food will be eaten. It is a common error to serve too much on a tray. To some patients this is repulsive, and the majority of them are not in a condition to digest large amounts of food; it is far better to give dainty servings with the understanding that more may be had if desired. The question of economy is no small one when two hundred or three hundred people are being served and the large majority of them being served more than they can eat. This same question of economy applies to the preparing of eggnogs and orangeades and the heating of broths and gruels. The amount needed should be measured out before preparing, leaving none to be thrown in the sink, as is too frequently done. Such things as these are the cause of the divergence of opinion between the kitchen and the ward with regard to quantities needed.

DIET TRAINING FOR NURSES

The nurse's training in dietetics comes into use when she does the serving in the wards, and it is unfortunate if she has not had at least her diet kitchen training before she does any serving. This training enables her to give much better service to the patients and to the hospital, and it is quite essential where there are many special diets to be served.

It is only by keeping in close touch with the various wards and knowing the needs of each that she can give the best service to the patients with a minimum of work in the serving pantries, and without overtaxing the working capacity of the kitchen. In order to keep expenses as they should be she must have full knowledge of the store rooms and the markets.

Though there may be a very rigid system regulating requisitions for supplies in other parts of the house, the general impression in the average hospital is that the kitchen is managed on the short-order restaurant plan and that anything desired should be obtainable at any time desired.

The recognition of the commissary department as an organized part of the whole scheme, with which almost every other department is more or less intimately connected, is so recent that we scarcely realize that it exists. With this recognition is coming a demand that the department be placed on a higher plane, and a higher standard is being set for the person in charge, whether he be cook or dietitian.

Fig. 1. Children's Seashore House—Western front of the group.

FORTY YEARS OF THALASSO-THERAPY

The Work and Achievements of the Children's Seashore House for Invalid Children at Atlantic City, New Jersey—Thousands of Mothers and Children Rescued—Some By-products of Experience

By WM. H. BENNETT, M. D., Physician in Charge

ATLANTIC CITY has in the Children's Seashore House for Invalid Children the largest children's institution devoted to thalasso-therapy in America. It has accommodations for four hundred and annually cares for over thirty-six hundred persons. It is also the oldest institution of the kind in the country.

It was organized in 1872 and began its work then in a little cottage containing thirteen beds. The following year it was opened in a building erected right on the beach for its special purposes, with accommodations for forty children.

As its work grew during the succeeding twenty-eight years, the capacity of this building was increased until there was room in it and its dependencies for two hundred and twenty-five patients.

In 1902 its old quarters were abandoned, and its present commodious group of buildings was erected with accommodations in all its departments for over four hundred.

The present institution occupies a whole city block in the Chelsea District of Atlantic City and is bounded on three sides by wide streets, while on the fourth is the beach and the ocean beyond. The location is ideal.

On one side, the buildings face the principal avenue of the city, while on the other there is an unobstructed view of the sea. In the group there are ten buildings. In the main building there are accommodations for seventy-two patients. It is surrounded on four sides and on two floors by ample porch room, a feature which plays an important part in the daily life of the institution. Connected with the main building at each end is a large ward building accommodating sixty patients. These two buildings are likewise surrounded by ample porches, giving in all a stretch of about twelve hundred feet of porches ten feet wide.

From the ocean front of the main group of buildings there extends seaward on each side of the grounds a double row of "Mothers' Cottages," little connected cabins, nine by twelve feet, sufficiently low to cause no obstruction to the sea view or sea breeze. Each of these is intended for the accommodation of a mother with her sick infant and such well children as she may be obliged to bring with her. Ample dining rooms and laundries are provided for these mothers. They do their own laundry work and care for their own little cabins, but their own and their children's meals are provided for them in excellent quality and in great abundance. In a special diet kitchen modified milk and other food for their babies is prepared under the direction of the physicians, and served at prescribed hours.

In one corner of the grounds, on the beach, is a ward for sick infants who cannot have their mothers' care.

Extensive facilities have been provided for ocean bathing, not only for all children who are able to bathe, but also for their mothers. Often

from one hundred and fifty to two hundred bathe in the ocean in a single day.

Facing the main avenue of the city are three most important buildings. In the center is the domestic service building containing the kitchen, in which the meals for nearly five hundred are cooked; the many dining rooms in which they are served; and the bed rooms in which the servants are lodged. On one side of it is the steam laundry, and on the other the isolation building, for cases of contagious disease originating in the house.

The institution was intended for the sick and delicate children of Philadelphia, and among its first inmates were children from the hospitals of the city. During the first thirty-eight years of its existence it was open in summer only, but since 1910 some portion of the institution has been open throughout the year.

At first only children under twelve years of age were admitted, but gradually its scope has been widened until now it receives children of all ages from the youngest infant to the girl of twenty, and in its summer camp off in the sand dunes, boys of sixteen.

The work of the institution may be classified under four heads: first, the baby-saving work; second, its fortifying work for delicate children not yet ill; third, its work for convalescents; fourth, its work for children with bone and gland diseases.

The work under the first head is carried on in summer, principally in the Mothers' Cottages already referred to. They have accommodations for thirty-six mothers and one hundred children. In this branch of the work the mothers are made partakers of the benefits bestowed upon their children, often because the mother and her nursing child cannot be separated, but more often because it is realized that the first step toward helping a sick infant should be the building up of its care-worn mother.

To each mother with a sick infant is assigned one of the little cabins and if she has several other little ones too young to be left at home, she is allowed to have them with her. She and her little family have the exclusive use of it.

In this department of the work a large number of cases of gastrointestinal troubles in infants are treated with great success. The debilitating summer heat and the use of unfit food are the two most important factors in their causation. At the institution suitable food prepared by the dietitian under the direction of the physicians, and the cool, invigorating sea breezes have a magic influence on the children brought from the unsanitary conditions in their hot city homes. They revive at once, and great improvement or complete restoration is the usual result. Over twenty-five hundred cases of gastrointestinal disease have been cared for up to the present time.

The fortifying work included under the second head reaches the largest number of children. It is carried on in the ward buildings and in the camp for boys. Thousands of children are taken from the most congested portions of Philadelphia, where want and insalubrity reign and given a week or more of abundance and happiness in the pure air and sunshine of the seacoast.

Since its organization over sixty thousand have been thus cared for and it is believed that the fresh vigor which this large number has acquired at the seashore has during the last twenty-five years been a powerful factor in improving the physical condition of the poor in Philadelphia.

The work for convalescents is a very large one. Scores of children from the city hospitals recovering from surgical operations and all manner of illnesses are received every year. A short stay at the seashore after weeks in the hospital ward

Fig. 2. Children's Seashore House—Facing the ocean.

usually converts an ordinarily tedious convalescence into a short, happy one. Up to the present time three thousand medical and nearly one thousand surgical convalescents have been cared for.

The work for children suffering from bone and gland disease began on the opening day of the institution forty years ago, and it has steadily grown until at present there are usually to be found more cases of these diseases in the wards of this institution than in any one hospital in Philadelphia. One hundred and sixty such cases were treated in the past year, and as each was

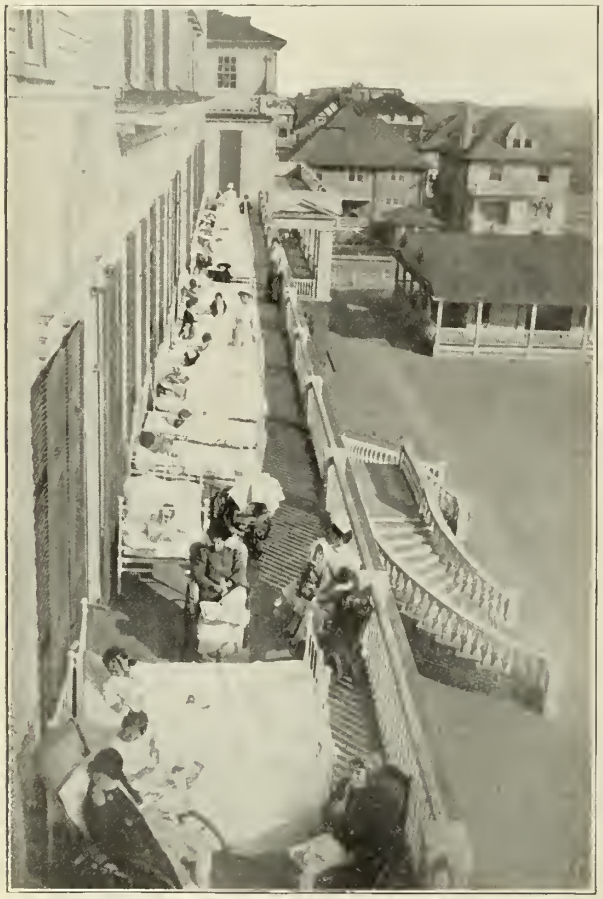


Fig. 3. Children's Seashore House—Sun bath porches. (Note the mothers' cottages below the porch.)

allowed to remain long enough to gain substantial benefit the seventy-two beds of the building devoted to their care were constantly full. Not a few remained throughout the year. As these are the cases which most need the sea air, they are given the preference, and the work done for them seems likely to overshadow the other work of the institution. This work is probably already larger than that done in any similar institution in America and it is steadily growing. If the funds of the institution permitted, it could be made four times what it is at present without the erection of any additional buildings.

The changes which take place in children under the seashore influence are very wonderful. It is a common experience at the Children's House for parents to fail to recognize their own children. Mothers have refused to accept their children until it was proven by scars that there was no mistake. Physicians, too, fail to realize that the healthy children returned to them are the pale, puny patients whom they sent to us a few weeks before. What is the real cause of the change we do not know. We do know that there is something in the seashore air which stimulates the appetite and aids the digestion. The first experience of the newcomer is a desire for food. The child who, in the city hospital, has been forced to eat, often enjoys voluntarily a hearty breakfast on the morning following its arrival. This appetite usually lasts as long as the child remains and in consequence there is a rapid gain in weight. This is especially true of convalescents, who, of course, gain anywhere, but most rapidly at the seashore. A gain of a pound a day for two weeks for a boy of fourteen is not an exceptional occurrence after typhoid fever.

There are a few exceptions to the almost universal rule of the steady gain, and it is as difficult to explain them as it is to give a reason for the good appetite of the majority.

While the improvement in general health is almost invariable, the improvement in local conditions in the many cases of bone disease treated at the institution is not so constant, although the two frequently correspond. On examining the records of the past year we find that out of 147 cases of bone disease admitted all except 8 showed a marked improvement in general health, but only 108 showed a corresponding improvement in local conditions. Of 23 cases of gland diseases admitted all except one were greatly improved, both in general health and in local conditions.

At this institution no selection of cases is made on admission. All needing thalasso-therapy are received without regard to the effect of this plan upon our statistics. Our records therefore do not show results as uniformly good as if only hopeful cases were received. The best results can, of course, be obtained when the bone disease is in its incipiency, and it is the incipient cases which should be sent away from the crowded wards of the city hospitals to the invigorating atmosphere of the seashore.

The treatment at the Children's Seashore House, apart from its surgical aspect, is almost entirely hygienic. Medicines play a very insignificant part in it. Food is given the first consideration; it is supplied in an abundance and in an appetizing form. Only the best bread and butter,

the freshest eggs and meat are purchased. Fresh vegetables and fruit are supplied as long as they are in season. Milk is supplied literally without limit; but while a child is allowed to have all it will drink, no child is required to drink a set amount. Eggs are used without stint, but only as they would be in the comfortable homes of those who do not need to economize. They are usually cooked. There is no forcing of raw eggs on rebellious stomachs. When the appetite is as good as it is at the seashore, compulsion is unnecessary. Fresh air in abundance day and night is insisted on. The nights are passed in large wards with open windows, and on every day that it does not rain or snow, the bedridden are wheeled to open porches where they stay until dusk, in sunshine and fresh air. The strictest cleanliness is enforced at all times, and in summer children able to bathe in the ocean have their daily sea baths. Children, however, who have bone disease of an acute form and who would be likely to be made worse by any sudden and unavoidable wrench which the waves might give are not allowed to bathe in the ocean. Tub baths of salt water are not used, as they are believed to have but little advantage over fresh water baths of the same temperature. Whatever advantage sea-bathing has, and it is very great, must in a large measure be attributed to the massage of the waves and the exercise and exhilaration of the sport. The remedial effect of the contact of salt water with the skin is probably insignificant.

Fig. 4. Children's Seashore House. (Note the broad expanse of porches and sun bath rooms and wards.)

Following the example of Rollier, heliotherapy has been given a very fair trial. The exposure necessary in carrying it out has still further fortified our children against the effects of changes of temperature, and contributed to the building up of their general health, but we have not been able to get at the seashore the wonderful results Rollier has reported in the mountains at Lysin.

For many years mental sunshine has been considered a psychotherapeutic agent of no mean importance. The teachings of Crile in regard to anoci-association may perhaps suggest a scientific basis for its efficiency. Happiness is cultivated throughout the institution. There is no suppression of youthful spirits. The children talk, laugh and sing and shout in the wards as freely as they would in their own homes, while diversion is provided by toys, games, music, and, best of all, by daily lessons given by a teacher who is one of the regular employees.

In the treatment of our many cases of bone disease, advantage is taken of every means that modern orthopedic science has suggested in the way of casts, extensions and braces, to keep the parts at rest and in good position.

The seashore offers a very great advantage in the treatment of joint affections, in that it is seldom necessary to hasten the getting a patient out of bed for hygienic reasons as must so often be done in the hospitals and homes of the cities.

The appetite and general condition of bed-patients usually keep good in the sea air and children are therefore able to have without detriment the very great benefit of prolonged rest in bed to an extent which they cannot have elsewhere.

As in most of the cases coming to us from the city hospitals needed operations have already been performed, there remains for us only to give each child the best surgical care and all the benefits which the sea air has to offer. All the promising suggestions for the treatment of abscesses and sinuses in the way of pastes and antiseptic injections have in turn been given a thorough trial. Many of them had already been tried in the city hospitals, and when we realize of how little avail most of these methods of local treatment have been and see the great changes which take place in most of the children after their arrival at the seashore we are forced to conclude that the secret of the change lies in the sea breeze blown over an expanse of three thousand miles and laden, not as is the land-born wind with innumerable harmful particles, but with the salt spray, the health-giving "dust of the ocean."

We cannot fathom the secret of its cure, but in our ignorance we call it thalasso-therapy.

The new St: Luke's Hospital at Marquette, Mich., was opened January 28. It represents an outlay of $100,000, $70,000 having been expended on the building and $30,000 on the equipment. The hospital was constructed of tile, concrete and brick. It is three stories high with a large basement. The equipment includes an electric elevator, sterilization facilities, an x-ray room and a pathological laboratory. Accommodations for fifty-two patients have been provided, with room for additional beds when needed.

Through the efforts of the local commercial club a hospital has been established at Sapulpa, Okla.

CEREAL BREAKFAST FOODS—COMPOSITION, DIGESTIBILITY AND RELATIVE VALUE

Study of a Most Important Class of American Foods for Health and Sickness—Methods of Their Preparation in the Factory and in the Home—Selection for Various Circumstances

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PAPER II.

THE cereal foods occupy a very important place in the diet of the American family, both in sickness and in health. Vegetable foods supply about 95 percent of the carbohydrates in the average dietary, and the cereal foods themselves fully 55 percent. Grains in the raw state are unattractive to the taste and are somewhat difficult of digestion, and for this reason cereals are generally cooked before eating. The oldest method of cooking them was by parching, and in the early days the Scotchman's oatmeal and the Indian's maize were prepared in this way. The next development was porridge, in which the grain was boiled or steamed with water, milk or meat stock, and thus rendered more palatable. Porridge, however, requires prolonged cooking, its keeping qualities are poor, and it is far from being a convenient food preparation. In spite of these disadvantages —and the necessary long cooking is by no means an unqualified disadvantage—porridge has enjoyed a wide use and popularity, and the modern cereal breakfast food is its lineal descendant.

A generation ago practically the only cereal foods on the market were wheat flour, corn meal, hominy and hulled corn; barley, rye and rice finding only a very limited use. At the present time we find an almost endless number and variety of these specially prepared breakfast foods offered for our use. Some of the brands endure but for a season, while others have taken a fixed place in the long list of American food materials. Many of the brands, however, are exploited by extensive and expensive advertising and live only so long as a fluctuating public taste demands them. As has been well said: "It is safe to say that of those on sale today fully one-half will disappear within three years or will survive only on the top shelf of the country grocery, a food for worms rather than for men."

However, while the brand names of the foods may change, the types of cereal breakfast foods which they represent persist from year to year. There are four main types of these foods; those in which the grain is simply husked and more or less crushed or ground; those which have been steamed or partially cooked at the factory and then ground or rolled and dried; those which have been cooked by dry heat only, such as Puffed Rice or wheat; and those which have been acted upon to a greater or lesser extent by barley malt, and the insoluble starch correspondingly converted into a soluble form, as in the so-called "malted" foods.

The grains used in this country in these products are oats, wheat, corn, rice, and less commonly barley and rye. Although the various flours, starches, tapioca, and edible cereal pastes (noodles, macaroni, vermicelli and spaghetti) are in a sense cereal breakfast foods, a discussion of them is beyond the limits of the present paper. While the composition of the different cereal grains varies with the variety, the locality, the character of the season, the soil, and the kind of fertilizer used, their average composition as shown in Table I is sufficiently accurate for ordinary use.

Table I. Composition of Cereal Grains.

Cereal.	Water.	Ash.	Protein (N x 6.25).	Fiber.	Nitrogen-free extract.	Fat.
Barley, unhulled	10.9	2.5	11.0	3.9	60.4	2.3
Corn	10.9	1.4	9.9	1.7	71.0	4.2
Oats, unhulled	11.0	3.0	11.8	9.5	59.7	5.0
Oats, hulled	6.9	2.1	15.3	1.3	67.3	8.1
Rice, unhulled	10.5	4.0	7.5	9.0	67.4	1.6
Rice, hulled, unpolished.	12.0	1.0	8.0	1.0	76.0	2.0
Rice, polished	12.4	0.5	7.5	0.4	78.8	0.4
Rye	10.5	1.9	12.3	2.1	71.7	1.5
Wheat	10.6	1.8	12.3	2.4	71.2	1.7

It will be observed from the table that oats is characterized by its high protein and fat content; wheat, rye and barley by high protein and moderate fat; corn by its relatively high fat; while rice is distinctly low in protein, and in the polished form almost free from fat, fiber and ash. These characteristics of the individual grains have an important influence on the composition of the breakfast foods made from them, as will be shown later. In the preparation of certain breakfast foods the grain is used in its entirety; in others the germ is more or less removed, thus materially reducing the percentage of fat; in others the ground product has been thoroughly bolted, thus insuring only a minimum of fiber; while in others

the use of heat or a malting process has materially altered the form of carbohydrates present. In certain of the "ready-to-eat" brands, salt, sugar, syrup or honey has been added, thus increasing the ash or carbohydrates and decreasing the relative percentages of the other ingredients. In general, however, the composition of the finished breakfast food closely follows that of the parent grain.

Barley is not a popular breakfast cereal in this country, and when it is used it is usually in the form of "pearled" barley with a much lower content of fiber, and considerably less of all the other ingredients, except carbohydrates, than found in the unhulled, untreated grain.

The germ of the corn kernel is rich in fat, which tends to rancidity on keeping, and is accordingly generally more or less completely removed in the preparation of corn breakfast foods. Hominy, samp and cerealine are names used quite loosely for corn products, which differ little from one another in composition, save that hominy generally carries a little more fat. They are all essentially carbohydrate foods. The toasted and flaked corn preparations are steamed and rolled grains, which have been cooked longer, and to which salt and a sweetening material are commonly added.

In the oatmeal of our forefathers much of the hull or husk remained in the ground product, but with modern improved processes only small amounts of this fibrous hull are found in the finished meal. The germ is not removed from the oat preparations. In the crushed or flaked oat foods the grain has been more or less cooked with steam, and while still moist rolled into thin flakes, and dried. Such products are of course only partially cooked, and further cooking is necessary before using.

The rice foods come to us either in the flaked form, or as "puffed" rice. In the latter form the rice has been treated by a special process of cooking with dry heat, the resultant product somewhat resembling popcorn in flavor and texture.

In the preparation of wheat breakfast foods the germ as a rule is not removed, and save in farina and the gluten preparations more or less of the bran and middlings are retained. In certain products the whole grain, bran and all, is used. The unground wheat grain is seldom used in breakfast foods, except in the "puffed" products (prepared in a way similar to Puffed Rice), and in frumenty, in which the husked grain is boiled with milk and spices. The latter preparation, however, has but a restricted use in this country. Where the grain is only moderately crushed and the bran not removed, the product is known as cracked wheat or wheat grits. The flaked wheat foods are prepared in the same way as rolled or flaked oats. Shredded wheat is prepared by a special process and represents the whole grain. The gluten breakfast foods are characterized by a very high protein content and only about half the starch usually found in wheat foods. They are intended primarily for those to whom much starch in the diet is objectionable, but as a rule the extent to which the starch has been removed falls far short of the manufacturer's claims.

In the so-called "malted" foods advantage is taken of the diastatic power of barley malt, the diastase of malt imitating the action of the diastase of the saliva and pancreatic juice. Generally the amount of malt added is not sufficient to convert more than a part of the starch into soluble forms. Analysis shows that in many of these foods the soluble carbohydrates exist largely in the form of dextrin and suggests the possibility of glucose or some other soluble dextrin-containing carbohydrate being added. Furthermore, it must not be forgotten that the treatment of starch with dry heat also produces dextrin, as illustrated in the case of ordinary toast. It is evident, therefore, that many of these "malted" foods are not deserving of the name, a criticism that will be considered in more detail later.

Aside from the constituent grains and the method of manufacture the cereal breakfast foods are of two general classes, those which are either raw and which need prolonged cooking or which have been cooked to some extent and need further treatment before use, and those which are "ready-to-eat." Pearled barley, hominy, samp, corn meal, oat flakes, cracked wheat and farina are types of the first class, while among the "ready-to-eat" preparations we find such products as cerealine, corn flakes, flaked rice, Puffed Rice, rusk, Shredded Wheat, Force, Grape-Nuts, Puffed Wheat and some of the various "malted" foods.

Table II gives the analyses of one hundred and eighteen of these products; sixty-seven of these were made in the writer's laboratory, thirty-three by Frear of the Pennsylvania Experiment Station, eight by Robison of the Michigan Station, and ten by Merrill and Mansfield of the Maine Station, these authorities being designated respectively in the table by the letters C, F, R and M. It is not claimed that this tabulation is complete in any sense, for, as already stated, many of the brands are exceedingly short-lived and new ones are constantly appearing. It is also true that analyses made of the same brand at different times often show considerable fluctuation in composition, depending upon varietal, climatic and seasonal conditions, and other factors. However, the table

TABLE II. COMPOSITION OF TYPICAL CEREAL BREAKFAST FOODS.

Authority.	Brand.	Manufacturer.	Net weight, oz.	Cost.		Water.	Ash.	Protein (N x 6.25).	Fiber.	Nitrogen-free extract.	Ether extract (fat).	Starch.	Water-soluble matter.	Calculated calories per 100 gms.
				Per package, cts.	Per pound, cts.									
	Barley Preparations.													
C	Barley Crystals	Farwell & Rhines, Watertown, N. Y.	31.9	25	12.5	9.9	1.2	11.5	0.9	75.2	1.3	62.7	....	359
C	Scotch Brand Pearled Barley	Quaker Oats Co., Chicago	17.8	10	9.0	12.1	1.0	9.5	0.3	76.2	0.9	69.2	6.7	351
F	Ralston Health Barley Food	Ralston Purina Co., St. Louis	29.0	15	8.3	8.9	1.0	10.0	78.7		1.4	....	....	367
	Corn Preparations.													
C	Cerealine	American Hominy Co., Indianapolis	10.4	9	13.8	11.2	1.5	6.9	0.1	79.9	0.4	60.2	23.1	351
C	E-C Corn Flakes Toasted	Egg-O-See Cereal Co., Chicago	10.3	10	15.5	12.1	2.2	6.6	0.2	78.6	0.3	61.3	30.5	344
F	Egg-O-See, Corn Flaked and Toasted	Egg-O-See Cereal Co., Chicago	16.6	10	9.6	10.7	2.5	7.1	0.3	79.2	0.2	....	....	347
F	Elijah's Manna	Postum Cereal Co., Battle Creek, Mich.	21.7	15	11.1	7.2	1.4	7.1	0.3	83.8	0.2	....	....	365
C	F. S. Granulated Hominy	Quaker Oats Co., Chicago	74.1	25	5.4	13.3	0.4	8.0	0.2	77.1	1.0	75.7	3.0	349
M	Hecker's Hominy	Hecker-Jones-Jewell Mill. Co., New York	48.2	15	5.0	10.4	0.4	8.8	0.3	79.2	0.9	....	....	360
C	H-O New Process Hominy	The H-O Co., Buffalo, N. Y.	29.9	10	5.3	11.3	0.4	8.0	0.2	79.8	0.3	74.4	2.9	354
C	Kellogg's Toasted Corn Flakes	Toasted Corn Flake Co., Battle Creek, Mich.	9.7	10	16.5	11.7	2.7	6.4	0.2	78.8	0.2	55.5	29.2	343
C	Korn Kinks	The H-O Co., Buffalo, N. Y.	8.1	5	9.9	12.0	2.2	7.4	0.1	77.9	0.4	66.3	15.7	345
F	Korn Krisp	The Korn-Krisp Co., Battle Creek, Mich.	16.2	15	14.8	9.2	2.8	9.0	0.8	76.9	1.3	....	18.9	355
M	Nichols Pearl Hominy	Austin, Nichols & Co., New York	78.7	22	4.5	9.3	0.2	8.5	0.3	81.3	0.4	....	....	363
C	Nichols Snow White Samp	Austin, Nichols & Co., New York	30.9	10	5.2	13.4	0.3	7.8	0.5	77.7	0.3	78.2	2.6	345
M	Pierce's Hominy	S. S. Pierce Co., Boston	bulk.	....	5.0	10.9	0.3	8.1	0.3	79.8	0.6	....	....	357
C	Post Toasties	Postum Cereal Co., Battle Creek, Mich.	10.8	10	14.8	11.7	1.8	6.6	0.2	79.4	0.3	53.9	29.4	347
C	Quaker Toasted Corn Flakes	Quaker Oats Co., Chicago	10.7	8	12.0	11.6	1.3	6.8	0.0	78.9	0.4	68.3	28.4	350
C	Quaker Yellow Corn Meal	Quaker Oats Co., Chicago	46.4	12	4.1	12.3	0.5	7.5	0.2	78.7	0.8	75.7	2.2	352
C	Ralston Hominy Grits	Ralston Purina Co., St. Louis	29.9	10	5.3	11.3	1.0	9.0	0.4	75.4	2.9	70.9	5.3	364
C	Street's Perfection Hominy	S. H. Street, New Haven, Conn.	31.0	6	3.1	12.4	0.4	7.9	0.1	77.9	1.3	74.5	3.4	355
F	Toasted Cerealine Flakes	American Hominy Co., Indianapolis	9.8	10	16.3	8.8	0.8	7.4	0.3	82.4	0.3	....	....	362
	Oats Preparations.													
R	American Flaked Oat Groats	American Cereal Co., Chicago	32.0	10	5.0	9.1	1.8	18.4	2.5	61.0	7.2	54.4	9.3	382
M	Banner Rolled Oats	American Cereal Co., Chicago	68.6	25	5.8	7.7	1.9	18.0	0.9	64.7	6.8	....	....	392
M	Buckeye Rolled Oats	American Cereal Co., Chicago	31.5	10	5.1	9.6	1.7	14.5	0.9	66.8	6.5	....	....	384
C	Grandmother's Crushed Oats	Great Atlantic & Pacific Tea Co., New York	28.1	10	5.7	10.7	1.9	14.9	0.6	65.4	6.5	59.1	5.1	380
C	Health Brand White Oats	Lewis De Groff & Son, New York	32.9	12	5.8	10.9	2.0	13.8	1.0	64.5	7.8	58.8	7.6	383
C	Hornby's Steam Cooked Oat Meal	The H-O Co., Buffalo, N. Y.	28.8	15	8.3	10.6	1.7	16.1	0.8	64.1	6.7	59.2	5.8	381
C	Mother's Crushed Oats	The Great Western Cereal Co., Chicago	24.3	10	6.6	10.9	1.6	15.6	0.9	64.9	6.1	58.4	6.9	377
C	Paw-Nee Rolled Oats	The Pawnee Cereal Co., Cedar Rapids, Iowa	25.1	10	6.4	10.8	1.9	15.8	0.8	64.0	6.7	59.7	6.5	380
R	Pillsbury's Flaked Oat Food	Pillsbury-Washburn Flour Mills, Minneapolis	32.0	15	7.5	9.7	1.7	16.1	1.8	64.9	5.8	55.6	11.8	376
C	Premier 15-Minute Oat Flakes	Francis H. Leggett Co., New York	24.2	10	6.6	11.3	1.8	17.1	0.6	63.8	5.4	56.6	8.8	372
C	Pure Quaker Oats	Quaker Oats Co., Chicago	24.2	10	6.6	10.8	1.9	15.9	0.9	64.5	6.0	56.7	7.1	376
C	Sovereign 15-Minute Oat Flakes	Union Pacific Tea Co., New York	34.3	15	7.0	10.8	2.0	16.5	0.9	64.0	5.8	58.0	5.9	374
C	White Rose Rolled Oats	Seeman Bros., New York	30.4	12	6.3	10.3	1.9	14.3	0.7	64.8	8.0	59.0	8.2	388
	Rice Preparations.													
C	Cook's Flaked Rice	American Rice Food & Mfg. Co., Matawan, N. J.	15.1	12	12.7	12.6	0.4	7.8	0.2	78.9	0.1	78.2	4.2	348
C	Cook's Malto-Rice	American Rice Food & Mfg. Co., Matawan, N. J.	17.2	8	7.4	11.3	0.6	7.6	0.1	80.2	0.2	74.1	9.5	353
C	Milk Rice	Milkrice Co., Chicago	7.7	10	20.8	12.3	3.2	6.9	0.2	77.2	0.2	62.6	33.7	338
F	Nivara	New England Food Co., South Norwalk, Conn.	18.0	12.5	11.1	7.1	1.7	11.8	0.2	79.1	0.1	....	....	365
C	Quaker Puffed Rice	Quaker Oats Co., Chicago	7.5	10	21.3	12.2	0.4	7.6	0.1	79.5	0.2	61.8	51.9	350
	Wheat Preparations.													
F	Apitezo	American Cereal Co., Chicago	18.0	12.5	11.1	7.9	3.0	16.6	0.5	71.8	0.2	....	....	355
C	Brusson Farine au Gluten	Brusson Jenne, Villemur, France	8.7	25	46.0	10.9	0.6	33.9	0.2	53.8	0.6	48.8	....	356
C	Brusson Gluten Semolina	Brusson Jenne, Villemur, France	7.4	30	64.9	9.7	0.7	17.2	0.3	71.6	0.5	64.9	....	360
C	Cerena	Cerena Milling Co., Chicago	15.2	25	26.3	7.2	4.9	27.8	2.4	46.3	11.4	25.1	25.4	399
C	Christian's Laxative Cereal Flakes	Christian's Natural Food Co., New York	21.3	25	18.8	13.1	1.7	10.4	1.0	72.4	1.4	61.2	11.4	344
C	Cream of Wheat	Cream of Wheat Co., Minneapolis	28.7	15	8.4	13.1	0.6	11.5	0.2	73.7	0.9	71.1	6.8	349
R	Crescent Wheat Flakes	Lake Odessa Malted Cereal Co., Lake Odessa	16.0	15	15.0	9.5	3.2	9.3	1.6	74.7	1.7	60.6	18.3	351
C	Cresco Grits	Farwell & Rhines, Watertown, N. Y.	31.7	25	12.6	11.1	0.6	17.8	0.5	68.6	1.4	54.1	....	358
C	Crystal Wheat	Battle Creek Sanitarium Co., Battle Creek, Mich.	23.7	15	10.0	9.5	1.9	11.3	1.7	73.6	2.0	....	....	358
F	Egg-O-See	Egg-O-See Cereal Co., Chicago	13.4	10	11.9	8.2	2.2	10.9	1.4	76.1	1.2	....	....	359

C	Force	The Force Food Co., Chicago	12.9	15	18.6	10.7	2.8	10.6	1.1	73.7	1.1	60.0	12.8	347
M	Fould's Wheat Germ Meal	Fould's Milling Co., Cincinnati, Ohio	28.3	13	7.3	10.2	1.4	12.8	1.0	72.0	2.6	....	....	363
F	Go	American Cereal Co., Chicago	14.2	10	11.3	8.8	1.9	10.8	2.0	75.0	1.5	....	....	357
C	Grandmother's A. & P. Farina	Great Atlantic & Pacific Tea Co., New York	16.2	6	5.9	12.9	0.6	10.8	0.1	75.0	0.6	71.7	6.8	349
F	Grandmother's Breakfast Flakes	Great Atlantic & Pacific Tea Co., New York	13.5	10	11.9	6.8	2.5	10.0	1.6	77.7	1.4	....	....	363
C	Granola	Kellogg Food Co., Battle Creek, Mich	13.1	10	12.2	6.1	2.3	13.9	0.6	76.3	0.8	45.2	....	368
C	Granose Biscuit	Kellogg Food Co., Battle Creek, Mich	5.2	15	46.2	11.3	3.9	10.3	1.8	71.1	1.6	....	....	340
M	Granose Flakes	Kellogg Food Co., Battle Creek, Mich	10.7	15	22.4	7.7	3.0	11.4	2.0	74.8	1.1	....	....	355
C	Gum Gluten Breakfast Food	Pure Gluten Food Co., New York	16.4	20	19.5	7.5	1.2	37.8	0.4	51.8	1.3	37.9	...	370
C	Gum Gluten Granules	Pure Gluten Food Co., New York	16.0	20	20.0	7.5	1.5	45.5	0.3	43.6	1.6	32.3	....	371
F	Gust-O	The Pawnee Cereal Co., Buffalo, N. Y	9.2	10	17.4	8.1	2.9	10.3	1.3	76.2	1.2	....	....	357
F	Hardyfood	C. F. Hardy Co., Marshall, Mich	12.1	10	13.2	8.4	1.8	9.4	1.9	77.1	1.4	....	...	359
C	Hazard's Wheat Protein Breakfast Food		....	....	....	8.5	0.7	40.1	49.7		1.0	....	....	368
C	Hecker's Farina	Hecker-Jones-Jewell Mill. Co., New York	15.8	10	10.1	12.7	0.6	10.0	0.1	75.9	0.7	71.2	6.1	354
C	Holland Rusk	B. Arendhorst & Sons, Holland, Mich	6.7	10	23.8	11.0	1.3	12.1	0.1	70.4	5.1	55.8	16.6	376
F	Hower's Wheat Farina	American Cereal Co., Chicago	15.2	10	10.5	10.7	0.7	11.4	76.5		0.7	....	....	358
F	H-O Wheat Farina	The H-O Co., Buffalo, N. Y	14.6	10	11.0	5.6	0.4	12.3	80.6		1.1	....	....	382
F	Ideal Wheat X-Cel-O Flakes	National Cereal Co., Battle Creek, Mich	10.7	10	15.0	8.5	2.3	8.7	1.9	77.5	1.1	....	....	355
C	Imperial Granum	John Carle & Sons, New York	5.4	25	74.1	5.9	0.5	13.1	0.1	80.0	0.4	74.0	3.3	376
F	It	The Genesee Pure Food Co., Le Roy, N. Y	18.0	10	8.9	8.3	2.4	10.4	1.5	76.2	1.2	....	....	355
F	Jersey Flake	Jersey Cereal Food Co., Irwin, Pa	12.2	12.5	16.4	10.7	2.9	8.0	1.8	75.3	1.3	....	....	345
C	Jireh Whole Wheat Farina	Jireh Diabetic Food Co., New York	24.8	15	9.7	6.2	1.8	12.9	2.2	74.6	2.3	59.5	....	371
C	Jireh Whole Wheat Frumenty	Jireh Diabetic Food Co., New York	23.8	15	10.1	6.2	1.4	12.3	1.1	77.3	1.7	65.4	....	374
C	Manana	Health Food Co., New York	6.6	25	60.6	10.2	2.4	37.6	1.1	46.8	1.9	31.0	....	355
C	Mapl-Flake	Hygienic Food Co., Battle Creek, Mich	11.1	15	21.6	10.8	2.8	9.3	1.2	74.7	1.2	58.3	16.2	347
F	Most	Most Co., Pittsburg, Pa	14.3	10	11.2	8.2	1.1	12.3	0.3	77.7	0.4	....	....	364
F	Nichols Wheat Farina	Austin, Nichols & Co., New York	15.5	10	10.3	10.5	0.5	9.0	79.0		1.0	....	....	361
F	Nu-Life	Standard Food Co., Binghamton, N. Y	13.3	10	12.0	8.0	3.7	9.9	1.6	75.9	0.9	....	....	351
F	Orange Meat	The Orange Meat Co., Battle Creek, Mich	15.1	10	10.6	9.6	2.6	10.3	2.0	74.9	0.6	....	....	346
C	Pettijohn's Breakfast Food	American Cereal Co., Chicago	23.0	11	7.6	10.3	1.7	9.1	2.0	74.9	2.0	64.0	10.8	354
C	Power	Pillsbury-Washburn Flour Mills, Minneapolis	31.8	15	7.6	11.3	0.5	11.5	0.1	75.9	0.7	74.1	4.8	356
F	Pillsbury's Best Cereal	Pillsbury-Washburn Flour Mills, Minneapolis	31.8	15	7.6	8.7	1.0	12.7	76.6		1.0	....	....	366
F	Pillsbury's Vitos Wheat Food		12.0	10	13.3	7.9	2.8	10.9	1.6	76.2	0.6	....	....	354
C	Premier Farina	Francis H. Leggett Co., New York	15.6	10	10.3	14.1	0.5	11.1	0.1	73.3	0.9	71.0	8.3	346
F	Price's Wheat Flake Celery Food	Price Cereal Food Co., Chicago	12.6	12.5	15.9	7.1	2.2	10.1	1.9	77.1	1.6	....	....	363
C	Quaker Cracked Wheat	American Cereal Co., Chicago	29.9	15	8.0	11.7	1.7	9.3	1.7	73.3	2.3	63.6	9.4	351
F	Quaker Parched Farinose	Quaker Oats Co., Chicago	30.8	15	7.8	8.2	2.0	13.4	1.2	72.8	2.4	....	....	366
C	Quaker Wheat Berries	Quaker Oats Co., Chicago	7.2	10	22.5	10.0	1.4	13.8	1.3	71.6	1.9	52.7	26.5	359
F	Ralston Health Crisp	Ralston Purina Co., St. Louis	15.9	10	10.1	8.9	2.4	12.8	2.0	73.1	0.8	....	....	351
C	Ralston Health Food	Ralston Purina Co., St. Louis	29.2	15	8.2	12.4	1.4	11.9	1.1	71.5	1.7	64.4	7.9	349
C	Saxon Wheat Food	American Cereal Co., Chicago	25.4	15	9.4	9.8	0.8	12.8	0.5	74.4	1.7	69.6	5.0	364
C	Shredded Wheat Biscuit	The Shredded Wheat Co., Niagara Falls, N. Y	13.4	12	14.3	8.5	1.5	11.0	2.6	75.0	1.4	63.1	9.5	357
C	Street's Perfection Farina	S. H. Street, New Haven, Conn	16.0	10	10.0	13.1	0.5	10.3	0.1	74.9	1.1	71.1	6.3	351
C	Triscuit	The Natural Food Co., Niagara Falls, N. Y	13.0	10	12.3	10.3	1.7	11.0	1.7	73.9	1.4	60.8	10.1	352
F	Vigor	The H-O Co., Buffalo, N. Y	13.5	10	11.9	7.3	2.3	14.0	1.9	74.0	0.5	....	....	357
C	Wheatena	The Wheatena Co., New York	25.2	15	9.5	10.4	0.7	11.3	0.6	74.2	2.8	69.8	6.8	367
C	Wheatlet	The Franklin Mills, Lockport, N. Y	28.7	15	8.4	12.2	0.8	12.8	0.3	72.3	1.6	66.2	7.2	355
C	Zest	American Cereal Co., Chicago	11.5	9	12.5	10.7	2.6	9.0	1.2	75.3	1.2	60.1	35.3	348
	Mixed Grain Preparations.													
C	Brose Good Health Breakfast Food	The Kellogg Food Co., Battle Creek, Mich	18.1	5	13.3	10.1	2.6	14.4	3.1	65.5	4.3	....	....	358
F	Cero-Fruto	The Cero-Fruto Food Co., Battle Creek, Mich	15.5	0	10.3	8.5	3.0	10.2	1.8	75.3	1.2	....	....	353
F	Cera Nut Flakes	National Pure Food Co., Grand Rapids, Mich	....	10	....	8.8	3.1	13.4	1.8	71.4	1.5	....	29.0	353
C	Grape-Nuts	Postum Cereal Co., Battle Creek, Mich	16.5	12	11.5	10.3	1.9	11.5	1.5	74.2	0.6	36.3	39.2	348
C	Just's Diabetic Cereal Food	Just's Food Co., Syracuse, N. Y	9.6	45	75.0	6.3	0.4	0.8	0.0	92.4	0.1	2.6	88.4	374
C	Post Tavern Special	Postum Cereal Co., Battle Creek, Mich	28.7	15	8.4	9.9	0.9	10.9	0.5	76.9	1.1	69.3	....	361
C	Trix	The New England Cereal Co., South Norwalk, Conn	15.6	15	15.4	6.2	1.5	14.5	0.3	77.3	0.2	48.6	....	369
F	Voight Cream Flakes	Voight Cereal Food Co., Grand Rapids, Mich	14.6	15	16.4	8.6	1.8	10.6	2.1	75.5	1.4	....	26.4	357
	"Malted" Preparations.													
M	Brittle Bits	American Cereal Co., Chicago	16.8	13	12.5	6.9	1.5	14.1	1.0	76.0	0.5	....	....	365
F	Grandmother's Breakfast Grains	Great Atlantic & Pacific Tea Co., New York	16.0	10	10.0	6.9	1.1	13.6	0.6	77.1	0.7	....	45.4	369
F	Malta-Vita	Malta-Vita Pure Food Co., Battle Creek, Mich	18.4	15	13.0	8.1	2.1	8.9	1.7	78.1	1.1	....	16.3	358
M	Malt Barley Breakfast Food	Malted Cereal Co., Burlington, Vt	21.0	13	10.0	6.8	1.0	12.8	0.6	77.7	1.1	....	....	372
C	Malt Breakfast Food	Malted Cereal Co., Burlington, Vt	30.0	15	8.0	9.6	1.4	13.8	1.0	72.7	1.5	53.5	17.0	360
R	Malted Zwieback	Lambert Good Food Co., Battle Creek, Mich	16.0	15	15.0	9.2	1.7	14.7	1.3	71.5	1.6	60.3	13.7	359
M	Malt-Oats Breakfast Food	Malted Cereal Co., Burlington, Vt	21.8	13	9.6	6.4	1.8	16.7	0.9	68.8	5.4	....	....	391
R	Malt-Ola	Lansing Pure Food Co., Lansing, Mich	19.2	15	12.5	7.1	2.8	13.1	0.6	75.1	1.3	57.6	22.3	365
R	Malt-Too Flakes	Malt-Too Flake Food Co., Battle Creek, Mich	22.4	15	10.7	9.6	3.4	10.7	1.9	74.4	....	61.7	16.7	340
R	Malt Wheat Biscuit	Lambert Good Food Co., Battle Creek, Mich	18.6	15	12.9	8.5	1.7	12.7	0.4	76.3	0.4	47.2	31.9	360
R	Norka Malted Oats	Malted Food Co., Battle Creek, Mich	20.8	15	11.5	9.3	3.0	15.8	2.7	64.3	4.9	17.6	51.0	365
F	X-Cel-O Malted Wheat Food	Nation Cereal Co., Battle Creek, Mich	12.3	15	19.1	8.2	2.2	8.4	1.8	78.2	1.2	....	29.7	357

shows the average of the standard types and special brands, and it is useful for comparative purposes as well as for the preparation of dietaries.

NUTRITIVE VALUE.

In order that the relative composition of these foods may be shown more clearly, an abridged table, Table III, has been prepared, in which the average data for the different types are given, grouped under the two headings "to-be-cooked" and "ready-to-eat."

Among the foods requiring further cooking before use the gluten preparations are in a class by and from five to seventeen times as much fat as the other "to-be-cooked" products. In fact they are the only foods of this group that contain any important percentage of fat, and indeed for this reason they have been criticized as "heating" foods and undesirable for use in hot weather and with patients suffering from certain types of disease. It should be remembered, however, that an average serving of rolled oats is about 156 gms.—seven-eighths of which is water,—or an equivalent of 28 gms. of the uncooked oats. A daily consumption of this amount for four months would supply to the consumer only about the same

Table III. Average Composition of Typical Breakfast Foods.

Cereal.	Cost per lb., cts.	Water.	Ash.	Protein (N x 6.25).	Fiber.	Nitrogen-free extract.	Fat.	Unaltered starch.	Water-soluble material.	Calories per 100 gms. Total.	From protein.	From carbohydrates.	From fat.
To be cooked.													
Barley preparations	9.9	10.3	1.1	10.3	0.6	76.5	1.2	66.0	6.7	358	41	306	11
Hominy and samp	4.9	11.5	0.4	8.3	0.3	78.5	1.0	74.9	3.6	356	33	314	9
Corn meal	4.1	12.3	0.5	7.5	0.2	78.7	0.8	75.7	2.2	352	30	315	7
Oat preparations	6.4	10.3	1.8	15.9	1.0	64.4	6.6	57.8	7.5	381	64	258	59
Rice	5.0	12.4	0.5	7.5	0.4	78.8	0.4	....	....	349	30	315	4
Farina	9.4	11.6	0.5	10.9	0.1	76.0	0.9	71.7	6.5	356	44	304	8
Gluten preparations	36.5	8.9	1.3	39.0	0.5	49.0	1.3	37.5	....	364	156	196	12
Ready to serve.													
Flaked corn	13.3	10.8	1.8	6.9	0.2	80.0	0.3	60.9	26.1	350	27	320	3
Flaked rice	10.1	11.9	0.5	7.7	0.2	79.5	0.2	76.2	6.9	351	31	318	2
Puffed Rice	21.3	12.2	0.4	7.6	0.1	79.5	0.2	61.8	31.9	350	30	318	2
Flaked wheat	14.7	9.0	2.5	10.3	1.5	75.5	1.2	60.0	14.7	354	41	302	11
Puffed Wheat	22.5	10.0	1.4	13.8	1.3	71.6	1.9	52.7	26.5	359	55	287	17
Shredded Wheat	14.3	8.5	1.5	11.0	2.6	75.0	1.4	63.1	9.5	357	44	300	13
Triscuit	12.3	10.3	1.7	11.0	1.7	73.9	1.4	60.8	10.1	352	44	295	13
Zest	12.5	10.7	2.6	9.0	1.2	75.3	1.2	60.1	35.3	348	36	301	11
Rusk	23.8	11.0	1.3	12.1	0.1	70.4	5.1	55.8	16.6	376	48	282	46
Zwieback, wheat	....	9.5	1.7	9.9	0.6	75.7	2.6	....	....	366	40	303	23
Grape-Nuts	11.5	10.3	1.9	11.5	1.5	74.2	0.6	36.3	39.2	348	46	297	5
Just's Dietetic Cereal Food	75.0	6.3	0.4	0.8	0.0	92.4	0.1	2.6	88.4	374	3	370	1
Malt Breakfast Food	8.0	9.6	1.4	13.8	1.0	72.7	1.5	53.5	17.0	360	55	291	14
Malted Zwieback	15.0	9.2	1.7	14.7	1.3	71.5	1.6	60.3	13.7	359	59	286	14
Malt-Ola	12.5	7.1	2.8	13.1	0.6	75.1	1.3	57.6	22.3	365	53	300	12
Malted Wheat Biscuit	12.9	8.5	1.7	12.7	0.4	76.3	0.4	47.2	31.9	360	51	305	4
Norkas Malted Oats	11.5	9.3	3.0	15.8	2.7	64.3	4.9	17.6	51.0	365	63	257	45

themselves. They contain from three to five times as much protein as the other uncooked breakfast foods, and only from one-half to two-thirds as much starch. As already stated, they are intended primarily for the dietary of the diabetic and are included here simply for the sake of completeness. Aside from their composition, their very high cost places them in an entirely different class from the ordinary cereal foods. The other six types may be compared directly. A glance at the table shows the superiority of the oat preparations from a nutritive standpoint. They contain from 50 to 100 percent more protein amount of fat as is contained in one-half pound of butter. The "heating" effect of oatmeal preparations, therefore, may obviously be neglected except under most unusual conditions. If oatmeal supplies so little fat in the ordinary dietary, it is apparent that the amounts supplied by the other "to-be-cooked" cereals is almost negligible. This further emphasizes the fact that while these foods contain important percentages of protein, they are, with the exception of the oatmeals, essentially carbohydrate foods. The calculated calories, as given in the table, illustrate this point, and furthermore demonstrate the necessity of a consideration by the careful die-

titian of the source of the calorific value of the foods he employs. With the exception of the oatmeals, the six groups range from 349 to 358 calories per 100 gms., and the distribution of calories derived from protein, carbohydrates and fats is within relatively narrow limits. With oatmeal, however, with an average of only 25 calories per 100 gms. over farina, we have 45 percent more calories from protein, 638 percent more from fats and 15 percent less from carbohydrates. None of these foods contains an important amount of crude fiber, showing that the hulls and husks have been very largely removed, although oatmeal shows somewhat more than the other preparations. Oatmeal likewise contains the highest percentage of mineral ingredients. In none of the "to-be-cooked" preparations has any considerable part of the carbohydrates been rendered soluble, although here again oatmeal shows the highest percentage, probably because of the steaming it undergoes preliminary to the rolling process.

While among the "ready-to-eat" preparations considerable variations are noted in all the ingredients except the carbohydrates, the most striking differences are observed in the amounts of carbohydrates which have been rendered soluble in water by the various manufacturing processes. In some the malting or dextrinizing process has progressed to a considerable degree, while in others no more carbohydrate is soluble than in some of the uncooked preparations. In flaked rice, Shredded Wheat and Triscuit this deficiency is especially notable, as shown by the amount of starch present and the low percentage of water-soluble material. These data raise the important question as to the desirability of the extensive use in the dietaries of young children of foods containing such high percentages of unaltered starch. The flaked wheat preparations also show 60 percent of starch and only 14.7 percent of water extract. On the other hand flaked corn shows 26 and Puffed Rice and Puffed Wheat 31.9 and 26.5 percent, respectively, of material soluble in water. In Grape-Nuts the dextrinization process has gone further and 39.2 percent is soluble in water, but the presence of 36.3 percent of insoluble starch takes away much of the force of the manufacturer's statement that "the starch of the grains is largely transformed into grape sugar."

Among the "malted" foods we find that in but two instances has the malting process progressed very far. Practically all of Just's Dietetic Cereal Food, a purely carbohydrate food, is soluble in water. In Norka Malted Oats only 17.6 percent of insoluble starch remains and 51 percent of the food is water soluble. In the others only from 13 to 32 percent of water-soluble material is present, and in these, as already suggested, the soluble carbohydrates are probably due quite as much to dextrinization as to the action of malt.

DIGESTIBILITY.

The value of a food, however, depends not only upon the amounts of protein, fat and carbohydrate present, but also upon the digestibility of these nutrients, or in other words upon the thoroughness with which they are absorbed by the human organism. The following table, adapted mainly from data given in Farmers' Bulletin No. 249, United States Department of Agriculture, shows the relative digestible nutrients contained in the different types of cereal breakfast foods.

TABLE IV. DIGESTIBLE NUTRIENTS.

Cereal.	Protein.	Fat.	Carbohydrates.	Ash.
Rolled oats, steam-cooked	12.5	5.9	63.8	1.8
Flaked and malted oats	12.6	4.7	66.3	1.8
Cracked wheat	8.1	1.5	68.7	1.2
Rolled wheat, steam-cooked	8.5	1.6	70.7	1.1
Flaked wheat, ready-to-eat	7.8	1.1	69.0	1.2
Shredded Wheat	8.0	1.3	70.1	1.4
Farina	8.8	0.6	72.9	0.4
Flaked rye	7.8	1.3	71.1	1.3
Pearled barley	7.3	0.8	71.8	0.7
Corn meal	5.6	0.7	78.7	0.4
Hominy	6.2	0.8	78.0	0.3
Flaked corn	5.1	0.3	80.0	1.4
Rice, polished	6.3	0.4	73.3	0.4
Puffed Rice	6.2	0.2	77.9	0.3

Experiments made in this country with healthy men have shown that the highest coefficient of digestibility was obtained in the partially cooked rolled wheat products, and the lowest with the preparations made from unhulled wheat. Experiments conducted at the Maine Experiment Station with rolled oats, rolled wheat, corn meal, hominy and certain brands of specially prepared breakfast foods, showed that in general about 90 percent of the organic matter was digested when the cereals were eaten in a mixed diet containing bread and meat and in a simple diet of cereal, sugar and cream, and also when the results were computed for the breakfast food alone. The general conclusion from these experiments was that rolled wheat showed the highest coefficient of digestibility and the corn products the lowest, oats occupying an intermediate position. When the actual nutrients are compared with the total nutrients it is seen that the relation previously noted still maintains, that is, the oat preparations provide the largest amounts of digestible protein and fat, followed by wheat, rye and barley, while the corn and rice products supply but relatively

small amounts of these elements and relatively large amounts of carbohydrates. Other experiments of the Maine Station bring out another interesting point, already noted by several observers, namely, that the processes to which certain products have been subjected during their manufacture, while converting a part of the starch into more soluble carbohydrates, have at the same time diminished the digestibility of the protein. For instance, rolled wheat showed 85 percent digestible protein, while Force and Grape-Nuts showed but 76.2 and Shredded Wheat only 57.7 percent. These and other experiments show that the raw cereals, if sufficiently cooked, are as quickly and as easily digested as the best malted cereals, and more quickly than the ordinary prepared cereals and a large majority of the so-called "malted" cereals. It is evident from these data that the dietitian must not take too seriously the claims of the average cereal food manufacturer as to the superior digestibility of his particular product.

"PREDIGESTED" AND "MALTED" FOODS.

Some reference has already been made to the incompleteness of the malting process evidenced by most of the so-called "malted" foods. These foods are commonly offered with claims either that they are of superior digestibility or that a portion of the food is already "predigested." The use of this latter term has been greatly abused. As Frear well says, "It is misleading to say of a food that has been slightly dextrinized in the process of roasting, that it is *predigested*, because the process of digestion has not been employed, and the chemical changes wrought in the food are only in a rough sense comparable to those effected by the soluble ferments." Furthermore, the dextrin produced by the exposure of starch to the temperature of the bake oven, while soluble in water like grape sugar and maltose, is so dissimilar to these simpler bodies in its general properties, that it should more properly be classed, physiologically speaking, with starch than with grape sugar and maltose.

It is doubtless true that certain of these "predigested" foods may have a legitimate use in the feeding of the sick, but even in such cases they should be used only under the physician's supervision. The modern breakfast food, however, is widely advertised for the use both of the sick and the general public. It is indeed a questionable advantage to a healthy man to have his food artificially digested. "If the digestive organs are out of order it may be well to save them work, but troubles of digestion are often very complicated affairs and the average person rarely has the knowledge needed to prescribe for himself. In general, those who are well should do their own work of digestion and those who are ill should consult a competent physician."

THE COOKING OF BREAKFAST FOODS.

The proper cooking of any food is a very important factor in its digestibility. Aside from the usefulness of heat in sterilizing food, the main purposes of cooking are to improve the food's appearance and flavor, and to break down certain refractory elements and to convert the nutrients into more assimilable forms, thereby increasing the food's digestibility.

The manufacturing processes to which the cereals are subjected in the production of breakfast foods—crushing, rolling, steaming, parching, puffing, or shredding—all to a greater or less degree rupture many of the cell walls of the grain, and thus render the cell contents more susceptible to the action of the digestive juices of the body. As a rule, however, as has already been shown, even some of the "ready-to-eat" foods come to us in a form which requires more cooking before their nutrients can become entirely available to the body. In the average home the over-cooking of cereals is most unusual; on the other hand under-cooking is all too common. This tendency is fostered by the claims of the breakfast food label, and we have offered to us "fifteen-minute" oat flakes and similar alluring and alleged time-conserving preparations. The consumer has no way of knowing how much of the needed cooking has been performed by the manufacturer, and he may safely assume that the directions accompanying the food underestimate rather than exaggerate the time necessary for the food's preparation. Frequently the prepared breakfast foods are condemned as indigestible simply because the cooking period has been too limited; but theoretically there is no reason why, if properly cooked, they should not be quite as digestible as cereals cooked entirely in the home. No hard and fast rule can be laid down as to the proper cooking period for the various cereals, but, generally speaking, the greater the amount of the husk or hull present the longer the food should be cooked. Whole grains, therefore, require more cooking than the rolled or crushed preparations.

In the use of breakfast foods and in a comparison of their relative nutritive value, the moisture content of the food as eaten must not be overlooked. Our tables clearly show that, pound for pound, rolled oats supplies more actual nutriment and more calories than any of the ordinary breakfast foods. But rolled oats is never served in the dry form, and when properly prepared contains about 84 percent of moisture, instead of the 10

percent found in the uncooked cereal. Thus 28 gms. of oatmeal would be sufficient to yield the 156 gms. of the cooked product as placed on the table. Hominy absorbs 79 percent of water in cooking and rice only 72 percent. With the "ready-to-eat" cereals, in spite of their usual bulk, it is quite possible that the ordinary helping may contain more actual nutriment than the amount of cooked cereal generally served. This would doubtless be true for protein and carbohydrates, but to secure the same amount of fat contained in 28 gms. of dry oatmeal, 185 gms. of hominy, 462 of rice, 616 of flaked corn, 154 of flaked wheat, 924 of Puffed Rice and 308 gms. of Grape-Nuts, would be needed. Breakfast foods, of course, are never eaten in this wholesale way.

COST.

An inspection of Table II will show the extremely wide range in the cost per pound of these foods. Omitting the gluten preparations, Imperial Granum and Just's Dietetic Cereal Food, intended primarily for sick-room use, the cost per pound ranges from 3.1 to 46.2 cents. Of the preparations requiring cooking, the corn products are the cheapest, followed by rice and oats, with barley and wheat products the most expensive. The specially prepared foods, on the average, cost from two to three times as much per pound as simple cereal preparations such as oatmeal, farina and hominy. In a consideration of cost, however, composition must not be overlooked, and judged on this basis oatmeal is by far the cheapest of all the cereal breakfast foods. Nor must we forget that while we pay from two to three times as much for the prepared as for the uncooked foods, this price is in part justified by their convenience, and the saving in both time and fuel by the shortening of the home cooking period. In hotels, hospitals and large establishments where a fire is kept throughout the day for other purposes, the prolonged cooking required by the raw cereal may be effected with practically no expense. In households where a gas stove is used exclusively for cooking, and then only at specified and limited times, it is indeed a question whether the "ready-to-eat" brands may not in many cases be the more economical purchase.

ADULTERATION AND MISBRANDING.

Cereal breakfast foods are and always have been remarkably free from adulteration, and stand in the very first rank of American food products as regards soundness of the raw material used, cleanliness in methods of manufacturer, and general attractiveness of the finished product. On the other hand the manufacturers, even of some of the best known and most widely used brands, frequently make wild and extravagant claims for the nutriment value of their products, their digestibility and their "curative" powers. When special virtues are claimed for a breakfast cereal and it is offered as a "nerve food" or a "brain food," or when it is advertised as a specific for sixty-eight diseases, ranging from loose teeth to infantile paralysis, it passes from the category of honest, legitimate foods into the limbo of "patent" medicines, and brings dishonor on a class of foods of generally unimpeachable reputation.

New York Societies Launch Sight-Saving Movement

A campaign to prevent unnecessary blindness was started January 19 at the Lighthouse for the Blind, 111 East Fifty-ninth street, New York City, when the first of a series of "sight-saving" lectures was delivered by Dr. Walter B. Weidler, ophthalmologist of the Manhattan Eye and Ear Hospital. The lectures have been arranged by the New York Association for the Blind in collaboration with the American Medical Association, the Illuminating Engineering Society and the Board of Education. They are open to the public and are intended not only for the blind and those who are in danger of losing their sight, but for all who wish to inform themselves on the proper care of the eye.

A sight-saving service committee, organized to assist in the work, is composed of Dr. Ellice M. Alger, Professor of diseases of the eye in the Post-Graduate Hospital; President Thomas W. Churchill, of the Board of Education; Health Commissioner S. S. Goldwater; Dr. Ward A. Holden, ophthalmologist of the College of Physicians and Surgeons; Miss Winifred Holt, secretary of the New York Association for the Blind; Dr. Henry M. Leipziger, supervisor of the lecture bureau of the Board of Education; President George McAneny, of the Board of Aldermen; Arthur Williams, president of the Museum of Safety; and Dr. Talcott Williams, director of the Columbia School of Journalism.

With reference to the movement Miss Winifred Holt, secretary of the New York Association for the Blind, expresses herself as follows:

"Eight years' experience has taught us that the ranks of the blind could be greatly reduced by convincing the public of the need of proper hygiene, proper economic conditions, good lighting, fresh air, and exercise. The campaign about to start is in a sense an outgrowth of the clinic which we established at the Lighthouse a year ago. Blind people of all ages are here treated by experts, and the benefits already derived have been remarkable. In one instance the association was instrumental in finally curing five cases of blindness.

"The efforts of the Health Department in checking infant ophthalmia are encouraging, but the campaign should go still further. The sight of school children requires much care, and the cooperation of the Board of Education with the Lighthouse clinic has already been the means of restoring the sight of several boys and girls who had been given up as hopeless. We have more than one ex-blind man who is now earning his bread as a sighted person, and I could show you bright-eyed children, who came to us blind, now acting as sighted companions to other youngsters less fortunate."

The campaign will be extended to other cities.

Plans have been drawn for a $40,000 nurses' home to be erected at the Methodist Hospital, Des Moines, Iowa. The building is to be a four-story and basement fireproof structure, 80 x 70, with accommodations for 130 nurses.

THE NEW BETHESDA MATERNITY HOSPITAL IN CINCINNATI[1]

New Building Developed and Built as the Result of Operation of an Older Structure—Special Needs of Obstetrics Incorporated in the Architecture—Criticisms and Suggestions of a member of the Staff

By REV. C. GOLDER, Ph. D., President, and WILLIAM GILLESPIE, M. D., Member of Staff

THE Maternity department of Bethesda Hospital was established in 1902. Owing to its limited space, the need of a larger and modern equipped building has long been felt. In 1912, the architect, Mr. Gustave Drach, made plans, and in January of 1914 the new building was ready for occupancy. It has room for sixty-five beds, and 1,500 patients can be accommodated annually. This is equal to about one-fifth of the number of births yearly in greater Cincinnati. The building is fireproof and modern in every particular. The foundation is of stone and the enclosing walls are of Bedford stone up to the first story, colonial brick above, with a beautiful terra-cotta cornice above the fifth story. The stairways are constructed wholly of non-combustible material, and are enclosed in fireproof walls with self-closing metal doors at each floor. The elevator is enclosed in a fireproof shaft with solid metal doors, and is thoroughly protected against fire. There is no open communication between floors anywhere in the building. The floors and bases are of cement and mosaic. The doors leading into the corridors are four feet wide. The beautiful and spacious wing, called the utility wing, is separated from the main building by metal doors on each floor. This wing contains the elevator, diet kitchen, and clean-up room, and on every floor a nursery; also a linen room, the sterilizing room, two delivery rooms, and a doctor's room.

The architect has succeeded in getting away from the usual hospital effect, and in creating in the building the general appearance of a high-class hotel. The systems of communication, calls and signals are complete. The call by which the patient summons the nurse consists of a push button, which lights a small lamp above the door in the corridor, also a pilot lamp at the annunciator in the nurses' room, which indicates the number of the room. The signals remain lighted until the nurse goes to the room of the patient and there pushes another button which puts out all lamps connected with that room. A vacuum cleaning plant has been installed in the basement, with pipes leading to openings for hose connections at convenient places on each floor. The heating of the building is by direct radiation, all incoming air having been warmed to room temperature. The radiators are elevated to facilitate cleaning under them. They are all under automatic control, which insures a variation of less

Bethesda Maternity Hospital.

Delivery room, Bethesda Maternity Hospital.

[1]After Dr. Golder had prepared his paper, the editor asked for a note of criticism on the architectural result, to which request Dr. Gillespie has kindly responded. His suggestions must be of great value to those contemplating the building of a maternity hospital.—Ed.

than two degrees from the point for which the thermostat is set. Any room may be kept at any temperature desired. The general scheme of ventilating is as follows: the air passes through tempering radiators, then through an air washer, and is raised to seventy degrees. It is then driven by large fans through conduits to the different apartments. By means of another large fan in the attic the air is ejected through the ventilator heads in the roof. By this process the air is constantly circulating in the building, and changes eight times every hour. The operating rooms are ventilated and heated by the same system. Both operating rooms are exceptionally well lighted and are equipped with swinging chandeliers. The sterilizing room is located between the two operating rooms with doors opening into each. The equipment of this room is complete. Next to the operating room is the surgeons' dressing room, provided with lavatories, shower bath, lockers, etc. The roof garden can be reached by adequate elevator service. The view from this elevation is superb, and convalescents find pleasant recreation there.

In furnishing the building, neither time nor money was spared in an effort to secure the furniture best adapted to the purpose. Simplicity and durability has been our aim throughout. The building is modern in every particular, and with equipment it cost $125,000.

CRITICISM OF PLANS BY DR. GILLESPIE

In criticism of the plans of the Bethesda Maternity Hospital there are several things which could be suggested as improvements. At least one door should give access to the elevator so that the patient will not have to be taken up or down steps. In a maternity hospital this is of less importance than in an institution where all classes of patients are admitted, but even a hospital devoted entirely to obstetrical patients occasionally receives helpless cases.

It is a question whether it pays in a maternity hospital to have many rooms with private baths. A patient seldom wishes to pay for a private bath at a time when she cannot make use of it. It may be well to have a few such rooms, but their number should be limited.

In this age when it is difficult to get and train a sufficient number of competent young women, the question of help is of supreme importance, and anything tending to save labor should be carefully considered. I should therefore strongly advise that some simple means of consuming soiled dressings be installed on each floor rather than that they should be collected for future burning. This would be particularly valuable in infected cases, so that none but the nurse in charge should touch the infected dressings.

The general construction of the hospital is quite satisfactory. Its soundproof construction is a marked success. When a patient's door is closed she hears nothing; many insist upon their doors being left ajar, to prevent loneliness. This is in pleasant contrast to the usual complaints after a particularly noisy patient has been delivered.

The equipment of delivery rooms must vary according to the ideas and whims of the individual operators, but their number should be sufficient to insure one being always available. When the Bethesda Maternity is run at full capacity it will probably be necessary to have an emergency delivery room upon each floor in addition to those shown in the plans.

The ventilating system is a great success and the building as a whole is quite satisfactory.

New York City Builds New Hospital at Jamaica

The first building of a hospital group to be erected at Jamaica, L. I., for the New York City Department of Health is in course of construction. It is to be a three-story structure of the modified Spanish mission style of architecture. The walls are to be of hollow tile blocks with stucco finish, and the roof of red Spanish tile. The length of the building, including porches at either end, will be 180 feet, and the extreme width 60 feet. The width through the wards proper will be 30 feet. A large area of window space is to be provided.

The central portion of the building will be used for the administration and service of the hospital. On the first floor there will be a doctor's room, dining room, large observation room, diet kitchen, two nurses' rooms and baths. The north wing of the first floor will be divided into three small separate wards, with entrances to porches on each side. The south wing of the first floor will be provided with an admission and examination room, entirely separate from each other and the other portions of the building. The second story will contain a large convalescents' room, nurses' room, two quiet rooms and a diet kitchen. The third floor in the central part will have four dormitory rooms for the helpers.

The entire group is to comprise twenty buildings, consisting of twelve ward buildings similar to the one here described, an administration building, two dormitory buildings, kitchen, laundry, morgue, boiler house, stable and garage. The main idea in developing the general plan and design was to get away from the formal institutional effect and make the place as homelike as possible.

The Alameda County Hospital at San Leandro, near Oakland, Cal., has opened a training school for nurses, which the superintendent, Dr. C. A. Wills hopes to make the greatest institution of the kind on the Pacific coast. Miss Hester Thomas, formerly head nurse of the Episcopal Hospital in Philadelphia, is in charge of the school. Nurses in training will receive $8 to $10 a month in addition to all necessities and will not be required to work more than eight hours a day. A scarcity of good nurses is given as the reason for establishing the school and for the liberal inducements offered. In order to be admitted applicants must be in perfect health, physically able to perform the work expected of them, and must have done at least a year's high school work or its equivalent.

THE NORWOOD CIVIC ASSOCIATION HEALTH CENTER

A Helpful Cooperative Institution for the Small Town—How It Relieves the Needy Sick Without Pauperizing—Visiting Nursing Service—Maternity Cases

By ELIZABETH ROSS, R. N., Norwood, Mass.,
Supervisor of the Corner House of the Norwood Civic Association

THE purpose of this article is to give some idea of the aim and character of the work which the Health Center of the Norwood Civic Association is trying to inaugurate and work out. And in order to do this it is necessary to give some description of the conditions which exist in the town of Norwood; for every town has a different problem, according to its local characteristics.

Norwood is an industrial town of over nine thousand inhabitants, fifteen miles south of Boston. Its industries are, chiefly, tanneries and printing plants, while in the next town are large paper mills, which employ as many men living in Norwood as do the industries of Norwood itself. The people are divided into two distinct groups. The first group is composed of American workingmen of the middle class, self-respecting, industrious, but somewhat improvident, living up to a high city standard. The other group is made up of newly arrived immigrants of every nationality, struggling to get a footing in this new country. Between these two groups there is no connecting link. They are as far apart as though they lived with the sea between them, except when commercial interests bring them in contact with one another.

Our Health Center, as a part of the civic work, is planned to meet the needs of this particular town. We plan so to centralize all work that pertains to the care of the sick that the Center will control the standard as well as the cost. This is to be done by supervising all care of the sick in the homes and by ascertaining that no phase of the work is accentuated at the expense of the other. Statistics pertaining to the cost of caring for the sick have awakened us to the fact that a great deal of money is spent in hospital and charity nursing, and yet only about twenty per cent of the cases of sickness receive any scientific nursing care, while the other eighty per cent get on as best they may. This eighty per cent of cases occurs among the middle class wage earners who need every penny of their money to live and who are not and should not be paupers. The late Professor Norton of Harvard once said that it took just three days of privation to make a savage of a cultivated man. I am sure that people who have had experience will agree that it takes about three *hours* to make a pauper if only one goes at it the right way. One of the most important tasks of a Center like ours is to give to the people what they need and yet avoid such disaster. Our ability to ascertain the facts about every family in the town makes it nearly possible to do this. With school nurse, school visitor, the visiting nurses, our follow-up visitor and investigator, our close cooperation with all of the industrial plants and churches, there is no channel of information that is not open to us. We can, if we wish, learn the income and get a reasonable idea of the output of every family from one end of the town to the other.

We had a case a short time ago which seemed likely to end in tragedy. The family consisted of a man and his wife and baby. The woman was taken sick when the baby was a month old, and as the man had no work at the time he undertook the position of nurse and housekeeper, with the district nurse coming in twice a day. All went well until the mother lost her milk and the baby cried most of the time. At the end of a week the mother was still in a bad condition and the man was so desperate that he was ready to throw himself into the river. What was to be done? The nurse had kept the supervisor in touch with the case from the beginning, so that when she came in with the report that something *must* be done, it was not hard to decide what to do. The baby was taken to a good woman who was glad to earn a little money to help her daughter, who was the breadwinner of her family, and for a reasonable sum she cared for the baby for two weeks. The father during this time had a chance to get hold of himself and the mother had a chance to sleep, which for her meant recovery. At the end of the two weeks the baby was taken back to its mother, who was by that time able to care for it. The whole cost of this two weeks' care was ten dollars, whereas, if the woman had been sent to the hospital, the baby would still have had to be cared for, which would have trebled the cost besides breaking up the home.

This small case shows how much can be accomplished when it is possible to have an intimate knowledge of conditions. The father and mother knew that the work was being done through the Corner House, whose workers they knew and trusted. This example is cited to show how the Center protects the home by providing a central establishment, with the right sort of people in it, upon whom the members of a home can call and

confidently expect help in the hour of need. It also shows how the Center is able, by its affiliation with the work of the district nurses, to give valuable assistance. Think, moreover, what an advantage it is to the visiting nurse to know that what she is doing can be supplemented if necessary, and how much more effectively she can carry on her work under such conditions.

When sickness comes to any home it has a disorganizing effect, and often, in the home where there is a small income and many demands, the whole machinery breaks down. What is needed? Every case has its own needs and they are not alike. Doctors and neighbors may do their best, but their work is but a makeshift, and if the patient is a mother, how much good will medicine do if she knows that her children are uncared for and unhappy? Often the need of someone to keep the home together is far greater than skillful medical care or nursing. In such cases the type of worker that is needed must be found for the price that the family can afford to pay. She ought to be a woman who has been tried and found worthy, whether she be a woman working for a dollar a day or a highly trained worker earning a large salary. To meet these varied needs, does it not seem obvious that a nursing center with resources of all kinds at its command, and a supervisor whose business it is to know how to make use of these resources, is the reasonable solution of the problem?

The hospital problem in a small town is important, and all towns should have some place where accidents and minor operations can be properly cared for, but it is bad finance to carry on an expensive institution which cares for only ten percent of the sick, leaving the other ninety percent uncared for. When a town has a hospital—say of thirty beds—which is not generously endowed, the task of meeting the deficit leaves nothing for the many outside needs. In a town which is as near to a large city as is ours, the cases needing special care should be taken to the large hospitals, because of the specialists who give themselves to the work there. No small, out-of-town hospital can expect to have at its command men trained for special work; and the general practitioner cannot, and, if he is a conscientious man, will not, undertake special work. This means that in order to do good work a certain percent of the cases should be taken to the city; in this way the town hospital may be small and inexpensively conducted.

Our hospital has but five beds and is a part of the nursing center. Since its opening, six months ago, it has cared for sixty-five patients. It is carried on with a graduate nurse, assisted at times by the supervisor, and an attendant for night duty. The hospital nurse often goes out into the town when the two visiting nurses need help. It is as if the whole town were our hospital ward and all the nurses were on duty together.

The town records for three months show that out of one hundred and fifteen maternity cases only eighteen were not attended by our nurses. In every case a nurse went with the doctor and attended the delivery, the same nurse making subsequent visits, even when an attendant or a practical nurse had been placed in charge of the case to care for the family or patient or both. In maternity cases our nurses respond to every call for a nurse to attend the delivery, whether it is a normal or an instrument case, for we hold that only in this way can good work be done. The latest New York survey shows ninety-two percent of all births are home cases. Surely this ninety-two percent need the care of a nurse as much as the eight percent of hospital cases.

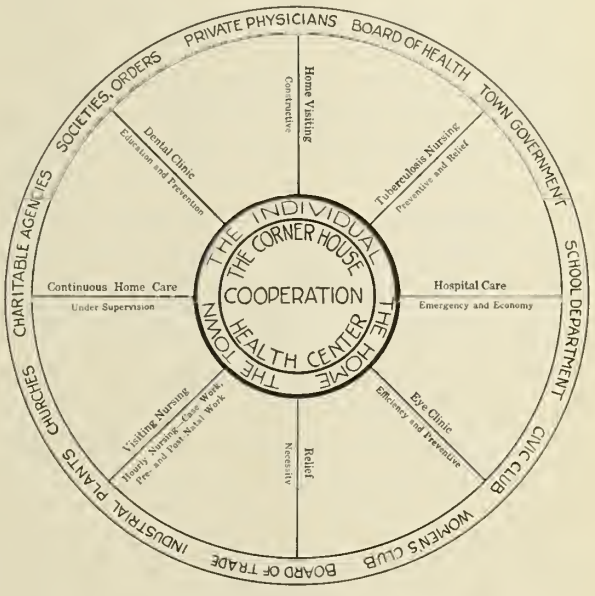


Fig. 1.

Our visiting nursing is conducted on a somewhat different scale than is most of the work of its kind in other towns. We have no sliding scale of prices. The work is done on a twenty-five-cents-a-visit basis, with a dollar for attendance at delivery in maternity cases and a dollar for administering ether. We find this a very satisfactory system, the work earning for itself more than half the cost of the nursing service. A standard price has a better effect upon those who make use of the nurse, as in every case the patient pays the full price or accepts charity.

All of our clinical work is carried on in cooperation with the school department. Children are dismissed from school to keep their appointments

with either the dental or the eye clinic. The school nurse sends the cases to the clinic, with a signed card which entitles the child to treatment. Cards signed by doctors or any of the Corner House nurses are also accepted by the clinics. The scale of prices is printed on the back of the admission card.

The accompanying diagram, Fig. 1, will show much better and more briefly than would many pages of explanation the method of carrying on the work of the Health Center. It is to be read in this fashion: The Corner House of the Norwood Civic Association is the center or the hub, and it aims to care for the health of the individual, the home, and the town, three in one and one in three —a complete circle. Radiating from the center are the spokes, each necessary to the strength of the wheel, and each in its special way benefiting the individual, the home, and the town. The outer rim of the wheel stands for cooperation. The progress made depends upon how well the different organizations cooperate. Our ideal will be realized when the cooperation is perfect, when all the organizations named on the rim are in perfect touch with the Corner House—the center.

The value of such a center which can so control and supervise the methods of caring for the health of a community cannot be overestimated.

THE MANUFACTURE OF NITROUS OXIDE FOR ANESTHESIA IN HOSPITALS

Some of the Difficulties in Gas-Oxygen Anesthesia – Cause of Cyanosis and Its Elimination—The Poisons in Impure Gas—Refinements in Its Manufacture—The New Installation

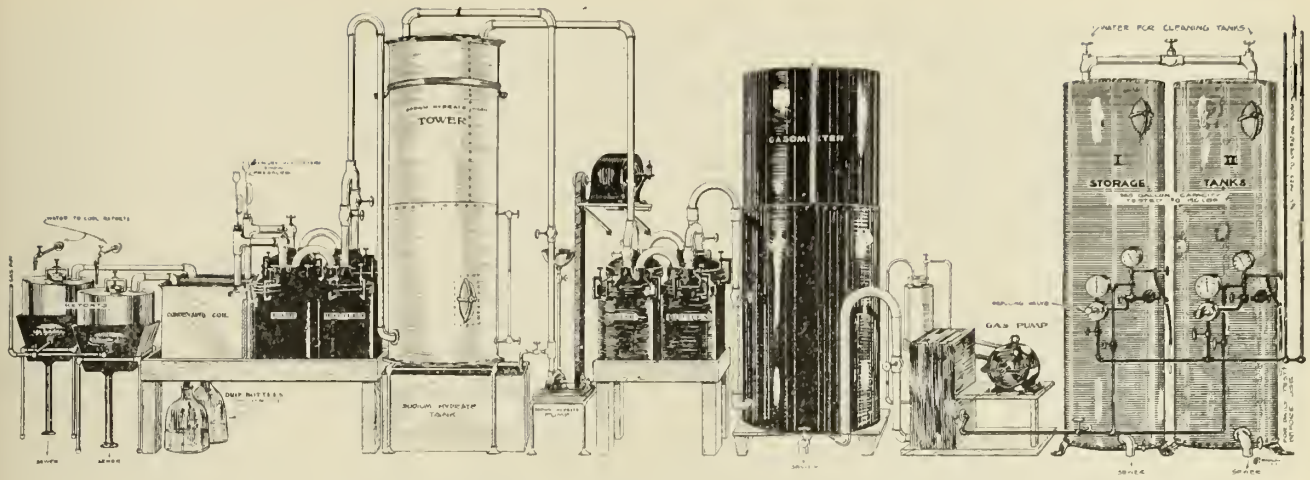
By A. R. WARNER, M. D., Superintendent Lakeside Hospital, Cleveland, Ohio

THERE are now evidences that the use of nitrous oxide-oxygen anesthesia will become more general than it has been, and we are hearing of other hospitals who are considering the installation of apparatus, as we have done at Lakeside, to manufacture the gas. It may therefore be timely and perhaps helpful to publish the story of its manufacture and use at Lakeside, in part as a warning against pitfalls and in part as evidence that success in manufacture can be attained.

At Lakeside Hospital nitrous oxide gas has been used for anesthesia extensively for about eight years and has been manufactured in the hospital as part of the routine for more than five years; and for this length of time nitrous oxide-oxygen has been the anesthetic of choice. Our experience, therefore, has amounted to the use of approximately 500,000 gallons in about 2,700 operations yearly.

For the first four years our gas was not entirely satisfactory, and at times not without harmful effects. This was overlooked at first, partly because on the whole we had as good results as others, and partly because it was still believed that cyanosis was necessarily present during nitrous oxide-oxygen anesthesia. As our pioneer anesthetist, Miss Hodgins, developed more skill with this anesthetic she was able to demonstrate to us that the cyanosis, and the irritation and the symptoms of toxemia following anesthesia, were present to a greater or less extent in all or several patients on the same day, and on other days were completely absent; and she convinced us that the gas contained a variable amount of some poison. Commercial gas, although not without these effects, seemed more uniform, and distinctly less irritating. This difference seemed fairly constant, although our plant and methods of manufacture were the same as the commercial plants known to us. On our worst day one patient of the gynecological service died, with all the symptoms of a severe toxemia, a few hours after a simple operation; one patient of the surgical service was severely poisoned, and three others suffered to a lesser extent. The predominating symptom was a cyanosis that no amount of oxygen could dispel. It seemed certain that the hemoglobin had been damaged, and our surgeons learned that out-of-door fresh-air treatment was most effective. The condition, with the exception of the color, resembled carbon monoxide poisoning, but unfortunately no spectroscopic examinations of the blood of these patients were made.

At last, about two years ago, it became evident to all that nitrous oxide must be obtained in greater purity or its use in the hospital abandoned. On the good days this anesthesia was so satisfactory and so easy for the patient that it seemed best to make every effort to make it right. The best consulting chemists obtainable were called to examine the plant and methods. Each pointed out possible defects and all agreed that better apparatus and methods could probably be developed by experiment. Each called attention to the great number of possible impurities. One of our trustees, Mr. H. M. Hanna, then offered to



Plan of apparatus installed in Lakeside Hospital for the manufacture of nitrous oxide.

provide the funds necessary to run an experimental plant at the hospital, and the writer undertook to solve in such a plant two problems:

First—To find a method for the manufacture of nitrous oxide of sufficient purity to be without poisonous effect.

Second—To devise apparatus by which this can be done in a routine way in hospitals under hospital conditions.

The details of the many experiments with chemical processes and types of apparatus need not be presented. The net result of the first six months' work was merely that we obtained more uniform gas, and we did not have the very bad days. About this time we found that nitric oxide, even when present in large amounts, was entirely removed from the nitrous oxide by confinement in iron tanks over night. This explained the lesser irritation from commercial gas, which is always shipped in iron cylinders. Commercial gas had always been free from nitric oxide, while our gas, which was sometimes used without standing long in the tanks, had not been free from it. In these experiments we became convinced that the poisonous effects were, at times at least, not from the nitric oxide, which has been the generally dreaded impurity.

The impurities theoretically possible to produce in the destructive distillation of even a pure ammonium nitrate in an iron or other reducing retort are many: among them are free ammonia and many of the more highly organized, well known hemoglobin poisons, such as the hydrazines, hydroxylamines, and others. It seemed possible that these were causing the trouble. Our gas and the best samples of commercial gas obtainable were found slightly alkaline to phenolthalein. Published analysis of commercial nitrous oxide had reported the presence of ammonia and nitrogen. This certified to the presence of ammonia, or of substances breaking down to ammonia. A thorough washing with strong sulphuric acid was then added as another step in the process of purification. On this day—now over a year ago—our gas became absolutely neutral in reaction, and the peculiar cyanosis disappeared from our operating rooms, never again to appear when acid-washed gas was used. We have, however, seen it each time that the installation of new apparatus in the plant made it necessary for us to shut down and for a few days use commercial gas *not* scrubbed with acid.

As a further result of our experiments, it may be mentioned that our plant has been changed from the conventional commercial plant in the following essential particulars:

1. The use of a retort material less liable to attack by the vaporized ammonium nitrate. The iron retorts were corroded through in about six weeks. The best material yet found, having the required strength, is a 95 percent aluminum compound. (In this retort ammonium nitrate is heated, forming, theoretically, pure nitrous oxide and water, but, practically, a mixture of many nitrogenous compounds.)

2. The use of larger outlets for the retorts, fitted with packing joints connecting directly with larger caliber piping; thereby removing 60 percent of the back pressure and lowering the boiling temperature.

3. Discontinuation of the use of glass tubing entirely, because it was too easily broken.

4. The practice of cooling the gas immediately to about 10°C., to remove the water (45 percent by weight), and to catch and recombine the greater part of the dissociation products of the distillation.

5. Oxidization of nitric oxide to nitric acid, which is removed by the scrubbing with sodium hydrate (10 percent solution) which follows.

6. The scrubbing with sulphuric acid (20 percent) mentioned above, which follows the scrubbing with sodium nitrate.

7. The insertion of mercury monometers after each process to act as a signal to indicate any obstruction, leak, or unusual condition, and to give (by comparison) enough evidence of rate of gas flow to be a satisfactory indicator for practical purposes.

8. We have also developed more satisfactory models for several parts of a plant of hospital size, some of which are along new lines.

Laboratory experiments by Dr. H. G. Haskins, Associate Professor of Organic Chemistry and Biochemistry in Western Reserve University Medical College, has confirmed the following points:

1. The advantage of non-corroding retorts, which reduce and disintegrate less of the ammonium nitrate.

2. The advantage of distillation under lower pressure and temperature, in that it causes less dissociation.

3. The effectiveness of the cooling of the gas to remove the water and to recombine promptly the dissociation products. This large bulk of water catches a large proportion of the impurities too much changed to recombine.

4. The importance of the scrubbing with sulphuric acid to remove the free ammonia and other alkaline substances (as hydrazines and hydroxylamines) possibly present. The only alkaline substance identified, however, was ammonium. Without the acid washing the gas would contain alkaline substances organic in nature.

The existence of the more highly organized and more poisonous alkaline impurities has not as yet been demonstrated in samples tested, and animal work to determine whether free ammonia itself when inhaled in anesthesia can produce the effects noted, has not been done. The use of gas from our plant for a year, absolutely without ill effects, has lessened local interest in troubles from impurities. It is in a way unfortunate that these troubles were ended so promptly by practical methods before they were scientifically investigated. We hope the practical result will some day be fully explained.

To our minds the first problem has been solved: nitrous oxide can be manufactured in sufficient purity to be absolutely safe for use in anesthesia. We are not quite sure about the second problem. Unstinted funds for experimenting with apparatus have enabled us to develop a plant by which Lakeside can manufacture such a gas in routine and safely, but the walls and ceiling of our room still bear marks made by the pieces of bursted retorts and our employees have not forgotten the fumes which repeatedly filled the entire hospital "from the gas plant." It is never entirely safe to place a pot containing a nitrogenous and an oxidizing substance over a fire. Many defects in the models of apparatus and troubles in handling of the purification have been overcome and nonessentials have been eliminated, so that it would now seem to us reasonable to expect any good chief engineer to supervise the plant and train a helper to run it; yet that remains to be demonstrated.

ADVANTAGES FROM THE PLANT.

The advantages derived from owning and operating such a plant may be summed up as follows:

1. There are no tanks in the operating room to explode, get in the way, or freeze up in the middle of an administration of the anesthetic.

2. Gas manufactured each day is compressed to 100 to 150 pounds pressure in iron tanks of 350-gallon capacity, and allowed to stand over night before use. From these tanks pipes lead to the operating rooms and a reducing valve regulates the pressure in these pipes accurately. The anesthetist is therefore assured of any volume of gas at uniform pressure (three pounds is used at Lakeside), and at room temperature, which obviates the annoyance from the freezing of gas from cylinders, and the irritation to the patient from the very cold gas inhaled, and insures an absolutely uniform rate of flow at any and all times from the same machine with the controlling valve set at a given point.

3. It is possible to use machines adapted to low pressure. The dropping of the pressure in our pipes from thirty to five pounds and adapting the machines to this pressure reduced the average consumption of nitrous oxide thirty percent, made the breathing distinctly easier for the patient and the anesthetic decidedly more satisfactory. We have since lowered the pressure to three pounds with still more improvement in the anesthesia and further saving of gas. For October, November and December, 1913, our average consumption of nitrous oxide per hour of anesthesia given was 444.3 gallons; for the same months of 1914 the figure was 151 gallons.

These same advantages can be secured without actually manufacturing the gas, by installing the same system of tanks, pipes and reducing valves and purchasing the gas in the largest cylinders available. The cylinders purchased are filled to high pressures (1,500 pounds, often liquefied) and will discharge 97 percent of their charge into tanks at 100 pounds pressure; therefore this arrangement is much more satisfactory and economical than attaching either small or large cylinders directly to the machines for administering the gas.

We do not manufacture oxygen gas; we purchase it in large cylinders at 2,000 pounds pressure and it is discharged into tanks through reducing valves at 100 to 200 pounds and sent to the operating room, in pipes parallel to the nitrous oxide pipes, at three pounds pressure, regulated by a second reducing valve. The third reducing valve on the machine for giving the gas reduces to practically atmospheric pressure. Several types of portable systems of decompressing tanks (automatic) or gasometers (hand-regulated) have been devised to secure the same results; but all such are necessarily large and cumbersome, have no advantages and take up valuable space in the operating room.

4. A large element in the cost of commercial gas is in the compression of it to high pressures for shipment. It can therefore be manufactured in small plants at about 60 percent of the cost of purchase. We have decided that this is a more satisfactory way to report cost than by our actual figures. The variation in the cost of a sufficiently pure ammonium nitrate will run in different localities nearly parallel to the variation in the cost of the gas, for it must be absolutely halogen-free and therefore, to be secured in the necessary quantities, must be especially made. This calculation is based on the use of 500,000 gallons per year and the employment of one man at $70.00 per month to run the plant under the supervision of the chief engineer. This percentage, therefore, will increase if less, and decrease if more, than this amount be manufactured yearly. It covers the upkeep of the plant, but does not allow for interest or general depreciation.

5. It is an advantage to have gas of known purity, and of sufficient purity to be absolutely safe. The tanks are fitted with a small outlet for testing. We test every lot of gas made, after it is in the tank and before it is sent to the operating room.

The result upon the quality of the product of scrubbing the gas with acid, as demonstrated at Lakeside, has convinced commercial dealers. Both of the manufacturing plants of Cleveland (the Ohio Chemical Co. and the Lennox Chemical Co.) have recently installed this process in their plants, so that it is now possible to purchase a safer commercial gas than heretofore.

THE COST OF INSTALLING A PLANT.

The cost of running pipes from the plant to the operating room depends entirely upon the distance and the difficulties. It is exactly the same as for running a ¾-inch water pipe; and this figure can be determined and the work done by any plumber.

The cost of installing two storage tanks for nitrous oxide and one for oxygen, with all fittings, gate valves, pressure-reducing valves, and all accessories and labor, is about $600.00, varying a little with the nearness to boiler works and the local price of labor. This outfit and the piping to the operating rooms gives the hospital the first three advantages from the plant listed above, and will save one-quarter of the cost of the gases over any method of connecting commercial cylinders of any size directly to the machines for giving the gas; and it will also make possible distinctly better anesthesia. The outfit requires one hundred square feet of floor space in the basement, or wherever it is located, for the nitrous oxide tanks, and fifty square feet for the oxygen tank.

The cost of installing a manufacturing plant modeled after the plant at Lakeside, of a size having two retorts, is $1,500.00 to $1,800.00 in addition to the $600.00 for storage tanks and the cost of piping to the operating room. The exact figure varies on account of several factors, the most important of which are the facilities for connecting with water and sewer, and the method of securing the heat selected, i. e., gas, coke, oil, or coal. The two-retort size is recommended for hospitals using anywhere between 100,000 and 1,000,000 gallons a year, because a mishap rarely affects both retorts. The plant to manufacture nitrous oxide will require three hundred square feet of floor space, and a small room (one hundred square feet) will also be needed for the storage of chemicals and supplies.

The additional cost of equipment to compress to liquefaction (1,500 pounds pressure) in order to fill small cylinders for use outside of the operating rooms, is $300.00. This would be advisable in some institutions, but in others unwise, the deciding factors being the amount of compressed gas used and the local price charged for it; also the qualifications of the chief engineer, as this pressure is too high to be handled easily. This equipment will occupy fifty square feet additional. The total floor space required amounts therefore to 600 square feet.

To give the reader some idea of the amount of machinery and apparatus of which such a plant as described above consists, the accompanying sketch is printed.

In order to insure to hospitals and the profession any and all advantages or benefits from methods in use or apparatus devised, applications for patents on all new processes and special designs have been filed in Washington, and all patents granted will be held by Lakeside Hospital to guarantee the free and unrestricted use of such advantages or benefits.

THE CONDUCT OF AN UNENDOWED SMALL HOSPITAL[1]

Forms for Managing the Finances—Divisions of the Organization for Doing the Work—Fixing the Responsibility—Determining the Amount of the Charity Work

By NETTIE B. JORDAN, Superintendent Aurora General Hospital, Aurora, Ill.

PAPER II

IN investigating the business systems used by various small hospitals, I find almost as many methods employed as there are courses of study in our country schools. Sometimes the superintendent of a small hospital will attempt to adopt the system of some very large hospital; with the result that John Smith, say, has his name entered by several people in a dozen records, and costs the hospital a dollar for clerical service, when possibly he was admitted only long enough for a fifty-cent dressing. In other hospitals one finds little or no record, and confusion made worse by frequent changes of management.

DAILY RECORD

Date	Admitted	Dismissed	Births	Deaths	Remaining	Total treated

Form 1. Items covered in daily record.

Name..... Residence.....

Date admission..... Age..... Sex.....

Married..... Single..... Occupation.....

Native..... Attending physician.....

Name of nearest living Relative and address.....

Family history.....

Disease, medical or surgical.....

Anesthetic.....

Date of discharge..... Result.....

Ward, rate..... Private room, rate.....

Form 2. Admission card—5 x 3 inches.

THE AURORA HOSPITAL

Name..... Residence.....

Account payable by.....

Date	Services	Charges	Date	Credits

Form 3. Reverse side of above contains 10 lines.

Far too few of our small hospitals are run on a well-regulated business basis. The result is friction in the management, and criticism from the public. One board member will demand stricter economy, while another is asking for better service. The hospital is fortunate that has on the board a member with courage enough to go more deeply into such disputes and make a comparative study of service and costs.

At this point I make bold to say that it should be compulsory for some member of every hospital organization to attend the American Hospital Association meetings. Unless we can get representatives from the thousands of hospitals in the United States and Canada to come together, there is little hope of standardizing hospital service. I wish also to say that most hospitals, both large and small, fall below the standard the medical profession would like to see them maintain.

In a subsequent article I intend taking the liberty of expressing what I believe to be the real sources of power as well as the weaknesses of each class of hospitals. In the small community hospital, local conditions, which I might describe as due to the personal equation, are by no means to be disregarded. Hard and fast rules may work admirably in a factory, but where human life is in the process of rebuilding one must take account of the hypersensitive state of the overanxious relatives and friends.

The clerical system in Aurora Hospital is simple, but has proven its accuracy by the test of a number of years. To the system of handling the finances there are two essentials: an accurate and accessible record of all money taken in; and a checking and voucher system of all money paid out.

AURORA HOSPITAL ASSOCIATION
Aurora, Illinois.

Date.....191..

Enclosed find check No.....for $.....in payment of invoices as listed below:

Date	Amount	Date	Amount	Date	Amount

AURORA HOSPITAL ASSOCIATION.

No receipt required. By.....

Form 4. Invoice account to accompany checks. Form is 7 x 5¼ inches, with 10 lines.

[1]This is the second in a series of papers on "The Conduct of an Unendowed Small Hospital." In January, "Raising Funds and Financing a Small Hospital." Next month, "Comparative Service in the Community Hospital."

The first question that naturally arises is, through how many hands does the money pass? Three people are empowered to itemize bills, receive money and receipt for it. They are the superintendent, assistant and bookkeeper. The receipt books are numbered and when the amount is entered on cash book and card the receipt number is also recorded. Receipts are made out for all cash and checks, and a daily audit keeps the books straight.

The cashier of the bank acts as treasurer of the hospital under a twenty-thousand-dollar bond with two sureties. All bills are paid by check, after the board has passed them; thus the bank does the bookkeeping. Special checks may be issued by the superintendent and secretary of the board for bills that allow a cash discount and for employees who may leave between paydays. Bills are paid monthly and the records are kept clear. By prompt payment the hospital has better credit and a closer purchasing power, and gets the benefit of cash discounts and better service from tradesmen.

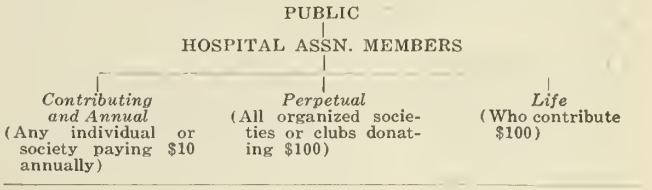
We arrange to have an ample cash balance always at the bank, in order to facilitate prompt payments. We anticipate any sinking of this reserve fund by putting on a charity day to secure more money.

The first consideration in our hospital is the welfare of the patient, regardless of financial conditions; but the subjects of medical and nursing care will be taken up in subsequent articles. The hospital admits only acute medical and surgical cases, but none from this class is refused admission because of lack of funds. Through the credit rating directory and on the advice of physicians patients are admitted to private rooms. In a small city the identity of patients is readily established, and their financial status is known.

Our charge for a private room, in the present old building, is fifteen dollars a week. Extra charges are made for pus dressings, special prescriptions, vaccines, electric fans, liquors and foods out of season. The laboratory work is done at the municipal laboratory or at a physician's private laboratory, and the hospital does not deal in this transaction. A charge of fifteen dollars a week is made for pupil specials. Board for graduate specials is charged at the rate of fifty cents a day. In a few months the present standard of rates will be advanced to cover the added expense of running a more expensive building. The county supervisor allows about a thousand dollars a year on homeless and indigent cases. The city donates seven hundred and fifty dollars a year for the cases picked up by the police department.

The method used to determine the amount of charity service is to take the difference between the net earnings from patients and the cost of operation, and divide by the per-capita cost; then subdivide into days of service paid by the city and the county, and the amount assumed by the hospital association.

Any interested citizen who has any business sense may audit our accounts with little difficulty,


PUBLIC
HOSPITAL ASSN. MEMBERS
Contributing and Annual (Any individual or society paying $10 annually)
Perpetual (All organized societies or clubs donating $100)
Life (Who contribute $100)

elect Board of Trustees, who appoint the following committees and officers:

President. Presides at all meetings. Member of all committees.
Secretary. Records all proceedings of the corporation.
Treasurer. Gives bond. Custodian of corporation's money.
Solicitor. Has charge of the legal business of the corporation.
Finance Committee. Consists of three members. Has general supervision of the finances of the Association. Audits each bill in connection with each committee authorizing the expenditure. Directors of fund raising.
Mayor of the City. Is member ex officio.
House Committee. Consists of three members. Directs management of buildings and grounds, with repairs and purchase of permanent supplies. Recommends members to the hospital administrative staff. Directors of the training school. Transacts all business not conflicting with other committees.
Superintendent. Member ex officio of all committees. Superintendent of hospital and training school. Makes monthly report to Board.
Supply Committee. Consists of three members. Supervises supply purchasing.
Auditing Committee. Consists of three members. Audits all books of the Association monthly.
Building Committee. Consists of three members, President of Board, President of Staff, and Superintendent of Hospital.
Staff Committee. Twelve members. Vacancies filled by majority vote of staff to Board, who give the appointments. Charity work. Consultants for medical and surgical house rules. Instructors to training school. Gratuitous care to sick nurses.

Fig. 5. Plan of organization.

and I have stated many times to business people that we invite anyone to inspect our records at any time. We are formulating plans for a surety organization for annual subscriptions to take the place of an endowment for the new hospital, which will incur heavier operating expenses.

Figures 1-5, herein, show the most important daily and monthly records, and the plan of organization.

The new $300,000 home of the Emergency Hospital, Washington, D. C., is expected to be ready for occupancy in May. The building is a nine-story structure, 100 x 100. It is constructed of gray pressed brick, with Indiana limestone up to the first floor, and limestone trimmings. The emergency department, the waiting room, and the operating room are located on the first floor, and so is the dispensary, which has a separate entrance. The administration offices are also on this floor. On the second floor will be the men's ward, for both white and colored, with sixteen beds each and room for additional cots. One of the main features of each floor will be the nurses' lookout station, with a glass front, from which every bed in the ward can be seen. There will be a roof garden and sun parlors. The private rooms will be directly connected with private baths, and will have exterior telephone service.

The MODERN HOSPITAL

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Hospital Staff Appointments.

As soon as a community begins to agitate for a new hospital, or whenever the broadening of the scope and influence of one already in existence is mooted, there begins at once a discussion of the medical staff, obviously because everyone recognizes the medical staff as the predominating factor in the success or failure of the institution.

In the course of such a discussion, laymen, trustees, the influential members of the community, and sometimes even the members of the medical profession itself, tacitly agree that the prominent medical men in the community must be on this new medical staff, as guaranteeing the high class of the institution. Nothing is farther from the truth of this inference.

If there is already a hospital in the community, it is usual that the prominent medical men of the locality are on its staff, and in most cases their prominence has come of their hospital connection and the opportunities that connection has brought them; and generally such men are most desirable hospital staff members. But too often, because a medical man is popular and has a large practice, it is assumed that he will make a good hospital man, though he may never have had a hospital connection in his life or worked in a hospital, even as an intern. He may not know a hemoglobinometer from a blood counter, and by reason of his not having kept abreast of modern medicine, his capacity for diagnosis may be confined to his personal examination of the patient at the bedside. The men who belong to this latter class are generally past middle life, they have become set in their ways, have little patience with "technic" of any kind, and are wholly incapable of fitting into the administrative or scientific necessities of a modern hospital.

It is far better to take men of the newer school of medicine, men who realize what modern medicine is, men who have served an apprenticeship in a good hospital, under modern teachers, and under the discipline of a scientifically conducted institution. Such men, even though they be too young to have acquired large practices, will grow rapidly, as compared with the others, and even two or three years will bring to them reputations that will fill your hospital with the best class of patients in the community.

The New "Habit-Forming Drugs" Law

The Harrison law, which goes into effect March 1, and which prescribes conditions under which "habit-forming drugs" may be distributed, dispensed and administered, seems to have occasioned a good deal of uneasiness in many hospitals; and great numbers of inquiries, and some protests have come to THE MODERN HOSPITAL about the new law; and there seems to be a feeling that the hospitals should have been exempted from the provisions of the law, and that they should not be compelled to register under it, or give an account of the amounts of the "habit-forming drugs" they buy, sell, or dispense.

The law covers "opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof;" and provides that those who propose to "manufacture, dispense, sell, distribute, or give away" any of these preparations shall register with the collector of internal revenue of the district the name and place of business, and pay to the collector $1.00 per annum. Employees need not register or pay the fee or make reports.

Under the law these drugs or any form of them can be sold or distributed, or dispensed on written order only. Doctors' prescriptions come within the meaning of this point, but a person registered to sell these drugs may give or sell them only to one registered, under the law, to receive them.

Anyone registered to handle these drugs in any way must take an inventory of his stock on hand on March 1, and report the inventory to the collector at the time he goes to register. Everyone proposing to handle these drugs must order them on a blank form obtainable only from the collector, at the rate of $1.00 per hundred blanks.

Hospitals must make their inventory, report it to the collector, pay their $1.00 for the registry, buy blank forms on which to buy more stock, get a prescription from the physician for every particle of any of the drugs dispensed, or a written order from anyone else. Doctors must be registered, in order to be allowed to prescribe the drugs, and any other buyer must also be registered.

The only exceptions under the law are government officials of the United States, or of a state or county, and prison and hospital officials operating under federal, state or county control.

There seems no good reason why hospitals should be exempt from the provisions of this law. Those institutions which realize their responsibilities in regard to habit-forming drugs must welcome any serious attempt on the part of the government to regulate and control their use, for the purpose of diminishing their terrible ravages. Institutions and physicians who are careless about prescribing and dispensing drugs known to have such far-reaching capacity for harm, should have some supervisory power over them to compel them to caution.

The requirements of hospitals are neither exacting nor complicated, and hospitals should gladly come within the meaning, spirit and letter of the law.

Dispensary and Out-Patient Work

Last month we announced, among other new departments of THE MODERN HOSPITAL, one to treat of Dispensary and Out-Patient Work, to be conducted by the committee on this subject of the American Hospital Association.

It has now been decided that Mr. Michael M. Davis, Jr., chairman of the committee, will personally assume responsibility for the conduct of the department, and that his committee will cooperate with him along the lines of a definitely prepared program.

This new department, the first installment of which appears among the other departments of this number, should be of the greatest helpfulness to hospitals everywhere. We know now that a hospital is not a thing within four walls, but that it is a part of the life and welfare of the whole community; that we cannot hope to be of wide usefulness without an intimate touch with the homes of the people to be benefited.

The dispensary and the out-patient service are the links connecting the hospital with the people outside, and only through their agency, supplemented with home and visiting nursing, can we bring the essentials of the public health, hygiene, sanitation and preventive medicine to their largest fruition.

Every hospital, large and small, must do this work in the future.

But hospital people are very busy with the inordinate amount of detail involved in administration. Mr. Davis and the members of his committee are acknowledged leaders in the field of this auxiliary hospital service, and we may look forward with certainty to the guidance and advice that they will bring us. The other members of Mr. Davis' committee are: Dr. Andrew R. Warner, superintendent Lakeside Hospital, Cleveland, Ohio; Dr. Joseph B. Howland, assistant administrator, Massachusetts General Hospital, Boston, Mass.; Dr. Willis G. Nealley, superintendent Brooklyn Hospital, Brooklyn, New York; Dr. R. B. Seem, assistant superintendent Johns Hopkins Hospital, Baltimore, Md.; Mr. G. W. Olson, superintendent Swedish Hospital, Minneapolis, Minn.; Miss Elizabeth F. Miller, superintendent Flushing Hospital, Flushing, New York.

Are You Going to the Convention?

Dr. Boyce impresses upon us all again, through this number of THE MODERN HOSPITAL, the desirability, even the necessity, of attending the convention of the American Hospital Association.

Hospital architecture, equipment and administration are growing too complex in this day of high health ideals for us to attempt to do our work alone; no one person can specialize in all its intricate branches and byways; it is necessary therefore that we shall somewhere have a clearing house for hospital information. It is unfair for a board of trustees to expect its superintendent to keep in step with the giant strides of progress, staying at home. Hospital administrators' salaries are too meager to enable them to finance their own attendance on the conventions, and without question the money devoted to sending its superintendent to the conventions is the most wisely spent money in the hospital's budget.

And again, hospital administrators are very hard-working people. There are sick people to care for twenty-four hours a day, and three hundred and sixty-five days in the year. Every instant is an emergency in the hospital—some patient stands on the brink; a slip, a false step by a nurse, an intern, an orderly or a department head may decide whether a life shall be lost or saved. Hospital administrators appreciate this, and even in their sleep their responsibilities hover near to disturb them. Do not these people need a rest, away from the scenes of their daily anxiety and labor?

The wise board of trustees, having in mind the greatest good of the sick entrusted to their care, and the best possible use of the money given to them for the purpose, will send their superintendents to the San Francisco convention.

Elsewhere we publish some most useful information about the convention, prepared by Dr. Summersgill, our Pacific Coast News Editor. It is a most attractive program, leaving altogether out of consideration the program of the convention itself, which Dr. Boyce tells us is to be the best we have ever had.

Superintendents should go to their boards at once, present the matter of the convention to them, just precisely as they would propose the expenditure of money for any other valuable thing the hospital needed, and ask them to vote the amount the trip will cost.

Almost Everybody Pleased

Almost everybody seems to be happy over the beautifully political settlement of the tangle over the new superintendent of the Boston City Hospital.

A $2,500 annual pension for retiring superintendent Dr. McCollom was applied to grease the skids by which that veteran administrator was released to make way for the mayor's family physician, Dr. John J. Dowling; Dr. Frank B. Holt, long time assistant superintendent, who should have had the new job when it really became necessary to retire Dr. McCollom, had his salary raised from $3,000 to $3,500; several surgeons and physicians have been rushed into print to tell what a great superintendent Dr. Dowling will make—and the air is filled with flying promises by the mayor and his friends about what great things are going to happen to the City Hospital.

We started out by agreeing that almost everybody was satisfied with the new political deal at the Boston City Hospital; that isn't quite true, but whatever criticism there is comes from two wholly unimportant factors, the nonpolitical public of Boston, who are not—between elections—of any consequence, and the sick poor of that city —evidently also unimportant.

In the meantime, let us not lose sight of the main point about this controversy: the Boston City Hospital had become one of the finest institutions for the care of the sick, in this country, under the administration of trained hospital administrators, Dr. Rowe and Dr. McCollom. The trustees, heretofore, had appointed trained and tried men, and had supported them, and let them alone. Now, all of a sudden, the mayor's family physician, a worthy clinician, wholly without administrative training, is appointed.

We haven't heard yet from the trustees of the hospital, without whose votes the mayor could not have executed "the deal." What do they think about their new appointee, and how do they figure it out that he is a better appointment than Dr. Holt would have been? This new board set out a year ago to make plans for the hospital "far into the future." Is the appointment of a new superintendent a sample of what is to come "far into the future?"

The Real Work of Hospitals.

Statements recently made by alienists and others interested in the care of nervous and mental diseases, that if it were not for alcohol and its associated stimulants and excitants the need for hospitals would be greatly lessened, have caused widespread comment and discussion, perhaps partly owing to the prohibition wave that is sweeping over the country.

There is no doubt that drink and narcotic and stimulant drugs are responsible for a very large percentage of sickness, crime and unhappiness. But that the need for hospitals would be less if these baneful agents of misfortune were absent, is open to discussion.

When I was a very young man, just graduated from my internship, I decided to seek a location in which to "hang out my shingle," and I sought everywhere to find the most unhealthy neighborhood for my activities. Finally my old preceptor, a wise old man of the world, learned indirectly of my quest and asked me about it.

When I had told him, he gave me the following advice, which I have remembered and employed in many devious ways:

"Son, don't go into a sickly place," he said; "the people there will be too poor to pay you; go to a healthy neighborhood where the people are pretty sure to be prosperous. They will need a doctor too, just about as much as those in the sickly community, because, being prosperous, they will hunt up a doctor for little aches and pains that the poor would never think of consulting a doctor about." Medical men everywhere know that this was sound advice, and that the principle holds faster today than it did thirty years ago.

Is not the same thing true of hospitals? We see evidences of it whenever money gets scarce and the times are hard. Even people who have surgical diseases postpone operation "until money gets a little easier." When times are good people pet themselves, make far more of their slight indispositions and go to a doctor and to a hospital oftentimes just to have a good rest and a quiet

time, and incidentally to have doctors and nurses make a fuss over them.

When there is a lot of sickness, we think of curing and caring for only the really ill; when there is not a great deal of sickness, we begin to think of preventive medicine in the abstract, of life extension work, of better living conditions for the poor, of precautionary and remedial work with children, of improving defects of mind, of vision, of digestion—in short, a thousand odds and ends of the public health that we would have no time for during epidemics or very sickly seasons.

So it really makes no difference to the hospital, so far as the amount of work is concerned; good hospitals are going to be busier, and always busier, far into the future. And if there were no really sick people at all, the work of good hospitals would be far more worth while than it is today, because they could do more permanent good in helping to raise the standards of health and adding to the physical, mental and moral happiness of all the people, than they can in merely curing temporary acute illnesses.

By all means let us join the hue and cry against alcohol in all its forms, and against the unnecessary use of harmful drugs, but let us not get the idea that even if these things were banished forever, the hospitals would have less work to do.

Announcement of Purchase

THE MODERN HOSPITAL Publishing Company has purchased the *International Hospital Record*, of Detroit, Michigan, its good will, collection of illustrations, library, subscription lists and other assets.

After the publication of the February number, which is brought out by Mr. Sutton, the *International Hospital Record* will be discontinued, by incorporation into THE MODERN HOSPITAL.

The discontinuance of the *International Hospital Record* must bring regrets to a large number of hospital people who have been on the firing line for better hospital standards. It was inaugurated nearly eighteen years ago, has lived through the most vital hospital changes that have occurred in centuries, and can lay claim to having been a large factor in hospital betterment during the years of its existence.

It has been no easy task to conduct a journal so special in character as a hospital publication must be, and Mr. Sutton, its veteran publisher and editor, during all its existence, has found the work too exacting, especially in conjunction with his printing business and the publication of his system of hospital records.

Mr. Sutton will continue to print and sell the hospital record forms, and since these have long since made their place, especially in the smaller hospitals of the country, he should find a profitable and interesting field for his activities. We bespeak for him the continued good will, the high respect and the patronage of the hospital people, which he has enjoyed in the past.

Dr. Hirsch's Third Paper

The third article of the series, The Hospital X-Ray Laboratory, was received too late for publication in this issue and has been held for the April number.

OHIO INSANE HOSPITAL SCHOOL A SUCCESS

Experiment to Educate Inmates Is to Take on Permanent Character and Be Expanded

The school at the Massillon (Ohio) State Hospital, which was conducted for some time as an experiment, and was described in an earlier issue of THE MODERN HOSPITAL, has been permanently put into practice. According to the plan evolved by Superintendent H. C. Eyman, the insane wards are divided into classes and each class is given instruction appropriate to its degree of mental development. The objects of the school are manifold, but the chief aim is to endeavor to improve the mental condition of the patients. The theory underlying is that mental exercise is the best stimulus for diseased mentality, just as physical exercise is supposed to promote the development of the body. In addition, the general school work, even in cases where it might be of questionable advantage in aiding feeble mentality, would have the advantage of keeping the minds of the patients engaged, and thus aid those whose condition is aggravated by constant brooding and worry. It is thought that the school will afford a general occupation for the insane that could not be provided in any other way.

RADIUM AT LOWER PRICE

American Government Officials Have Devised Process for Cheaper Extraction of the Precious Metal

In the annual report of the Director of the U. S. Bureau of Mines we are informed chemists and engineers of the bureau have demonstrated that a process has been devised for the extraction of radium from ores which can be used on a large scale, and will prove more efficient than that used by the largest foreign producers. It is claimed by this process it is possible that the cost of radium to the consumer will be reduced to one-third of the present price. The process is to be patented and dedicated to the public. Radium now sells at $120,000 a gram, but can be produced by the new process for $40,000 a gram, thus bringing it within the range of possibility for many of our small hospitals to purchase a supply.

St. Luke's Hospital, at Baltimore, Md., has been absorbed by the Maryland Homeopathic Hospital, North Mount street, Baltimore. All of the equipment will be combined at the latter institution, which will be known as the Hahnemann General Hospital, and it is announced that plans have been prepared for rebuilding the Mount street plant at a cost of $250,000. It is understood that the funds will be supplied by the national body of homeopaths.

RELATION OF THE STAFF TO THE ADMINISTRATION OF HOSPITALS.[1]

The Hospital Staff Should Be Given Organic Recognition With an Executive Committee Having Certain Administrative Functions—The Hospital Superintendent Defined.

BY DAVID L. EDSALL, M. D., BOSTON.

Innumerable instances in history have shown that with large undertakings and small ones a sense of loyalty and contentment gives the soundest basis for efficient and earnest service, and that the one thing beyond all others that is likely to make or break loyalty is the manner in which people are governed.

In hospitals, as well as in many other undertakings, therefore, the method of administration and control is a matter of the deepest importance, not simply from the standpoint of economical management, but from the standpoint of making the institution yield all that is possible in its chief business—the care of the sick and the improvement in methods of diagnosis and treatment.

It is, I think, self-evident that hospitals must be, in the final issue, under the control of boards composed chiefly of laymen. Besides other reasons, the financial problems involved in the conduct of a hospital are of themselves big enough to make it plain that there must be men of financial training in control of the large business affairs of a hospital, and, since divided authority always makes for confusion and all questions ultimately depend on the means of financing them, it is clear that the controlling board must have final authority over any matters that occur in the hospital if circumstances appear to them to demand in any instance that the board should exercise authority.

It is also, I think, clear that such boards, like all boards, need to have some individual executive officer who shall have full power to exercise his judgment in certain ways in the conduct of the institution, subject only to the control of the board. We can scarcely question the proposition that the board must have final authority when it wishes to exercise it, and must have an individual executive officer. The question before us in regard to the trustees and the administrative relations of the staff to them is, May they not advisedly give to the staff the opportunity and responsibility of conducting many details, retaining the power to revise the staff action in any case, but exercising this power only when important divergencies of opinion demand it?

In regard to the administrative office, the questions are chiefly what manner of man shall he be, what shall his relations with the trustees be, and what his relations with the staff? That is: (1) Is he to be chiefly a steward, or is he to be not only this, but also much more than this? (2) Is he to be the deputy of the trustees, or also to a large extent their guide? (3) Is he to be the superior of the staff in all things, or their superior in some and essentially an adviser in others?

As to the relation of the staff to the trustees, it would seem scarcely necessary to say that more loyal and valuable service would be rendered if the staff had some power of directing its own work and of determining the character that the advances in the hospital's work shall assume, than if it had not. Tacitly or openly this has been recognized in most hospitals; openly in some by establishing some official method by which the staff may control more or less of the activities of the hospital; tacitly in others through asking the advice and opinions of some members of the staff who gradually come to be recognized as especially wise or especially congenial to the board in their point of view. One of these methods must be used in any successful institution, for no undertaking can be long conducted successfully without some method of keeping in touch with the spirit of those who actually carry on the work, and no undertaking can secure and hold the services of vigorous-minded men who are leaders in their work without in some way giving them some authority, advisory or otherwise—not only over their own work, but over the conditions under which they work. Of the two forms of recognizing the opinions of the staff, the open and clearly defined method seems far the better. The method of listening to or actually asking the opinions of a few men who have no especial official relations to the board has the disadvantage that then the advice is usually asked of men who are known to be of congenial viewpoint, whereas what is quite as much needed, usually more needed in order to reach fair and wise decisions, is the opinion of those who differ in their views. Furthermore, the unofficial, irregular way of securing advice always leads to a condition like that of a king's favorite—the advisers usually hold their influence only by favor, and are always in a precarious position, which is often held only by some degree of finesse and lack of frankness, and this soon comes to mean politics. This tends toward confusion and jealousies, and destroys, rather than aids, general cooperation and loyalty. A regularly established official and continuous method of staff control of certain of the activities of the hospital—either executive or advisory, or both, in its nature—carried out by persons who are recognized by the staff as having the right to do this by virtue of their staff positions or through election, seems the only natural and secure way of accomplishing the object in view. The only questions that seem to need argument are, What shall be the duties of such a body and how shall the members be chosen?

As to the manner in which they shall be chosen, it would seem essential that the heads of the important services should be members of the body. They must control their services, or there would be confusion at once, and they cannot control their services if they themselves are controlled by others. It is also essential that the body representing the staff shall be small. Nothing reduces the effectiveness of any such body so much as large size. This is another of the many important arguments at least for continuous services of departmental heads. With rotating services, the number—if all the heads of services sat on this body throughout the year—would be so large as to be very unwieldly; whereas, if only those on duty were active on the body, it could no more exercise wise governing powers than could a board of trustees or a superintendent that changed every three or four months.

The question of the duties of this body depends on what the duties of the administrator of the hospital are. These duties vary in different hospitals from those chiefly of purchasing agent and adjutant of the trustees to those of a real executive, who not only controls the routine, but who plans and guides the administrative progress of the hospital. If the first-mentioned character of position is given him, the staff must exercise more administrative functions, or they will not be carried out and the hospital will do only routine. If the latter kind of man is at the head, the need of administrative activity on the part of the staff, while still very important, will be more restricted and in some ways advisory rather than executive.

It is difficult for me to see how there can be any difference of opinion in regard to the kind of executive needed. Hospitals have often become known through the

[1]Symposium with Dr. Cabot, read before the Philadelphia Pediatric Society, June 5, 1914.

medical and surgical work done in them by individuals without being in any way important as hospitals, just as otherwise unimportant towns often become known because of great men being born in them.

But when hospitals have had an important influence on hospital problems, there has usually been a vigorous and strong-minded man at the head of the administration, and in the nature of things this must usually be true. Everything that tends to make the hospital superintendent a man of large ability, fine training, and definite individuality is to the advantage of the hospital, and thus, necessarily, to the staff. One of the very first things necessary to lead such men into these positions is to give them suitable recompense for their services—on the one hand, in actual salary, but also in dignity of position and in responsibilities, and to avoid making them subordinate in any ways compatible with general interests. It is sometimes advocated that the superintendent be essentially a superior steward and purchasing agent, and that the staff heads of departments be given in all other ways financial as well as medical control of their departments. I cannot see how this character of administrative power for the staff is feasible, or how it could be successful, unless the staff chiefs had a long training in administrative matters before they were appointed, and spent a very large part of their time in administrative routine after they were appointed.

One of the frequent complaints of the staff, and one at times justified, is that the superintendent is the creature of the trustees, and that the staff needs receive no really judicial attention from the administration—that they are looked on in no more sympathetic way than the demands for new coats of paint or a new engine boiler. Nothing is more likely to make the superintendent take this viewpoint than to make his position that of a steward, and nothing is more likely to make him nobody's creature, and a wise judge of the general advisability of any expenditure or change in policy, than to secure a man of superior ability and individuality. It is often said that, when given decided powers, hospital superintendents, as well as other people, grow arbitrary. Determination and clear-headedness and justice to conflicting interests are sometimes mistaken for arbitrariness, but there is some danger that anyone may grow arbitrary if not either controlled in some way or at any rate made to show reasons for his actions. Few men can, however, be persistently arbitrary when opportunity is constantly given to demonstrate to them and to others that they are arbitrary, and such opportunity comes when proper organization and powers are given the staff.

To consider, therefore, what the independent powers of the superintendent should be, subject only to the control of the trustees—these and the powers of the staff cannot be and need not be defined in detail. To avoid confusion, he will often need to have the deciding voice. But some of his duties are clear. The general housekeeping of the hospital must, of course, be under his entire control, as must general matters of discipline, though, so far as the latter are concerned, any action should of course be taken against any member of the staff only after consultation with the head of the service, or the body representing the staff, and important matters of discipline relating to the staff should go to the trustees only after discussion with the department head and the staff committee, and dissenting opinions should be expressed. The administrator must, of course, have the nomination and control of his assistants. He should be trained in hospital construction, and should devise plans for new constructions—of course with the aid of architects so far as necessary, the plans being always subject to the advice of the representative staff body. He should be expected to devise new methods of organization when desirable, plan new general policies, and in many other ways be an active leader in the whole scheme of hospital progress, always presenting any such plans and changes to the representatives of the staff for their advice if they do not solely involve his own department.

The question of the training school for nurses is one of much importance. Whether the superintendent should entirely control it, as is usually the case, is open to discussion. I believe the staff should be kept informed of all the activities of the training school and all important changes in it, through a body of staff representatives, and this body should be expected to give advice. This is especially important in order that the staff may have an educated acquaintance with this work in broader ways than merely through observation of the nurses that each individual staff member meets in his work. This is all that they usually know about the training school. For the training school it is important in order that it may continuously have the interest and advice of a group of medical men who know its work and its problems, and can therefore advise wisely. For various reasons, however, the administrator should be more largely in control of the training school.

Now, as to the duties and powers of the staff representatives, I feel wholly clear that this committee should have executive powers as well as advisory. Purely advisory bodies soon languish and usually die. Such a body is worthless or harmful unless it does its work promptly and thoroughly, and spends thought and time on it. No group of able men will work in this way unless their work counts and their advice is usually accepted. If this is the case, they actually constitute an executive committee, and it is only unnecessarily belittling to it to call it advisory. Certain of its duties are apparent. They should resemble those of a properly constituted university faculty:

1. The heads of departments should have power to nominate all the subordinates in their departments. They should nominate to the staff committee, the nominations being subject to rejection in the occasional instances in which matters unrecognized by the departmental head justify this unusual action. When forwarded to the trustees, the latter should stand ready te accept the nomination unless unusual circumstances and clear reasons force them to do otherwise. In that case they should ask for another nomination from the staff committee. Heads of departments should be nominated by the executive committee after the same manner. This is, I think, the most essential of the powers to be given the staff. Persons of individuality demand, first of ali, that they shall have suitable and congenial fellow-workers.

2. The heads of departments should have power to conduct the affairs in their own departments as they see fit, so far as this does not involve increased expenditure of money, but any arrangement in each department that involves the interests and privileges of another department or of the hospital at large should be confirmed by the executive committee.

3. The rules of internal government of the staff and its activities should be determined by this committee, excepting for those few general rules which necessarily come from the trustees. This committee should control recommendations to the trustees regarding changes in the character of the work of any members of the staff, changes in the distribution of beds and other facilities, the establishment of new clinics, and other new staff activities. While the heads of services should be expected to improve ex-

isting conditions and originate new activities in their departments, this committee should be expected to do the same as regards the general activities of the hospital and the relations of the various departments to each other.

In all these affairs the trustees must, of course, reverse the action of the committee if it recommends unwise expenditure of money or unwise policies, and especially if its action seems to be the result of oncoming fossilization. But the spirit of the trustees, after establishing such a committee, must be to trust its action as that of a group of experts, and to accept its opinions unless convinced in any instance that it is seriously important that other action should be taken. It is for the best interests of the staff, and is necessary to stimulate them to constant progress, to feel that their actions are neither actually nor virtually absolute; but a spirit of mutual trustfulness must be encouraged earnestly even at the sacrifice of personal views, or this or any other scheme will finally fail of real success.

Let me recur to the question of the personnel of the staff committee. This will necessarily vary in different places, but there are two essentials—(1) that the heads of important services should, as already said, be on the committee; (2) that the superintendent be on the committee. This latter point is, I think, the most effectual method of quieting friction between the staff and the superintendent. Some persons would urge that the committee be entirely free of his influence and represent only the staff opinion. I believe the direct contrary accomplishes just what is so often needed—that by regularly and officially deliberating with the staff representatives he learns their needs and the reasons for their point of view to a degree that can be accomplished in no other way, and any wise man will be both educated and influenced by this in matters over which the staff has no executive powers as well as in those in which they have such powers. Quite as important as this, the staff will learn of many administrative details and difficulties, otherwise unknown to them, that will often lead them to alter their views.

There is, too, a side to this that is often overlooked. Put men, staff, administrators, or others on a body where they must express their opinions openly and support them against argument, and any fair man will follow his expressed opinion; leave him outside of such a body, and he is free to do as he pleases, and the automatic opportunity of influencing him—indeed, of morally controlling him—is lost.

This brings up another qualification for hospital superintendent that I have not mentioned, but that is very important—i. e., it is extremely desirable that he should have medical as well as administrative training. The vast majority of the questions in which he must act are either straight medical questions or have important medical bearings. An army or navy surgeon-general has even more important administrative duties—indeed they are chiefly administrative—but it is, I think, generally recognized that an officer of the line cannot be really efficient in such a position. One important reason that nonmedical superintendents of hospitals are so common, and by so many are preferred, is, I think, that these positions have often in past years, like teaching positions in secondary schools, been used by energetic men as temporary stopgaps to enable them to get into financial position to do something more attractive, or more often they have been occupied by those who drifted into them because they had too little energy or ability to succeed in the general professional scramble.

There can be no doubt that an efficient layman is more valuable as a superintendent than an inefficient medical man, but there can, I think, be no doubt that an efficient medical man is still more valuable; and, as regards the relations to the staff, it is far more difficult for a layman to act really in cooperation with the staff, and much more likely that he will either become arbitrary, or, if flexible, will accede too readily to the staff viewpoint as against the general administrative standpoint for fear of making mistakes through ignorance of the medical side. He should know at first hand how to judge of medical questions. One of the chief reasons why there have been so few able medical men in these positions is that very often the salaries have been insufficient to obtain either able laymen or able medical men, and because the position frequently so largely resembles that of a steward that it attracts chiefly those who are of dull minds or who are in want. The cure for this is evident and has already been indicated.

In the general scheme that I have outlined there is nothing that is original. Some hospitals have gone rather farther than this, but I have attempted to sketch an administrative organization, not for institutions that have very unusual relations, but rather for those institutions that have already been established for a more or less considerable time, have accumulated staffs, traditions and customs, and have now come more or less acutely to the realization that the progress of events has made much of the existing scheme obsolete, ineffective, and unwise, and in need of some sort of reorganization.

What I have sketched is in most ways essentially the plan instituted at the Massachusetts General Hospital just before I went there. In this hospital, with its very old traditions, with everything long established on the more usual lines of administration, but so well administered as to have served as a model for many other institutions, a very radical reorganization was carried out by mutual desire of the trustees, the superintendent, and the staff, through which important powers and responsibilities have been given to the staff representatives. That the change has been to the very great benefit of the hospital is, I think, recognized by everyone, and it has worked with a smoothness that may well surprise one familiar with the diverse and complex interests of the hospital and the proper pride in and devotion to its traditions that is characteristic of the institution. This result fairly demonstrates the feasibility and desirability of similar reorganizations in many other long-established institutions.

The outline that I have given will leave many instances in your minds where it seems doubtful whether questions would be administrative or fall within the bailiwick of the staff committee, and many where it is not clear whether the staff would have executive or advisory powers. Many such instances arise, but they have given us little trouble. Nearly always, after discussion, action on them is unanimous, and is clearly taken, not because of individual feeling, but because open discussion has demonstrated the wise course of action, and I am sure that in most such instances no one on our committee has given attention to the question whether the action was merely advisory or not. The action has been almost universally accepted by the administrator and the trustees.

The manner in which the executive committee is constituted and the general statement of its powers is shown by the following rules of the trustees relating thereto:

ARTICLE 1. There shall be a general executive committee of the general hospital consisting of the two chiefs of service of the medical department, two chiefs of service of the surgical department, one of the chiefs of the special departments of dermatology, neurology, laryngology, and pathology, who shall be chosen among themselves by ballot

to represent them, and the resident physician.[1] The resident physician shall act as secretary of the board.

This committee shall have general supervision of the medical, surgical, and laboratory work of the general hospital. In matters affecting administration or the expenditure of money for medical, surgical, or laboratory purposes, the function of the general executive committee shall be advisory to the resident physician, or through him to the trustees. It shall make nominations to the trustees in case of vacancies in all staff positions.

Each department may signify to the general executive committee its preference for the vacant office.

ART. 2. In case of prolonged absence of a member of the general executive committee, other than the resident physician, the vacancy shall be filled in the following manner: in the case of a chief of a surgical service, the visiting surgeon who is substituting for him on the surgical executive committee; in the case of a chief of a medical service, the visiting physician who takes his place on the medical executive committee; in the case of the representative of the special departments, an alternate who shall be selected in the same manner as the representative of the social departments.

By the term "resident physician," as it relates to membership on the various executive committees, is meant the person who is acting in that capacity at time of meeting, whether it be the resident physician or one of his assistants.

ART. 3. The general executive committee shall prescribe, subject to confirmation by the trustees, house rules for the management of the various medical, surgical, and laboratory departments.

As illustrative of the actual activities of such a committee, aside from the nominations for vacancies and new positions and the many routine details, I would note some of the matters they have had to act on as described in the last year's report of the general executive committee of the Massachusetts General Hospital in a summary made by Dr. Richard Cabot:

FOLLOW-UP SYSTEM.—The most important achievement of recent years has been the establishment of the "follow-up" system urged by Dr. E. A. Codman. Up to the present time no hospital known to us in this country or abroad has had an efficient system of following the results of treatment after the patient leaves the hospital. Hence there has been no way of being sure that the medical and surgical work of the institution is as good as the present state of knowledge and the resources of the hospital, personal and financial, permit. Under the system which has now been established on the surgical side of the hospital, the relative efficiency of the surgical treatment of any given disease in different wards by different surgeons or by different technical methods can be estimated. Doubtless this follow-up system will later be extended in one form or another to all departments of the hospital. The children's department and the orthopedic department have already installed systems of their own, and the orthopedic out-patient service has succeeded in reducing the percentage of lost cases (those making one visit only) from 18 percent to 12 percent.

An efficiency committee has been appointed representing the medical and surgical departments of the hospital and the administration. This committee is studying in detail the work of one department after another, and, as the result of its work, important improvements have already been made in the organization of one department. This committee is entirely an instrument of the general executive committee to accomplish some of the detail of its work.

CLINICAL CLERKS.—Another important change which took place in September of the past year was the introduction of fourth-year medical students into the medical wards (as clinical clerks). There they are now taking part in the actual work of the hospital, and not merely receiving instruction, as in the past. Under the guidance of the house physician and the house pupils, these medical students are assigned to ward work in groups of twelve, each group remaining on duty for two months. They help the interns by assuming part of the work of history-taking and laboratory analysis. The opportunity thus furnished is also of more value in the education of the student than any system of teaching which gives him opportunities without duties.

HOUSE PHYSICIAN.—The appointment of a paid house physician for the east medical service was made during the past year for the first time, following the example of the surgical department, which has now had a house surgeon on both of its services for two years. The house physician can be called on by the house pupils to assist them in the decision of difficult points arising in the absence of the visiting physician and chief of service. He is also engaged largely in research work further described below. A similar appointment will be made on the west medical service as soon as a suitable candidate is available.

THIRD-YEAR STUDENTS IN OUT-PATIENT DEPARTMENT.—Our out-patient work has been improved during the past year by the compulsory assignment of third-year Harvard medical students in rotation to the different clinics. In former years third-year medical students were not allowed to work in the out-patient department, and it has been very difficult to secure an efficient staff of volunteers. Now this clinical work is assigned to them as a necessary part of their medical school curriculum.

CLINIC MANAGERS.—Another improvement in the efficiency of out-patient work has been achieved by the introduction in three departments—the throat, the nerve, and the children's medical—of clinic managers, young women who are not expected to do either nursing work or social work, but to see that the clinic moves along smoothly and without hitches, to minimize the necessary waiting of patients for their turn, and to attend to the interdepartmental relations—to patients referred, transferred, consultations, etc.

INDUSTRIAL DISEASE.—The out-patient record systems have been modified so that in the male medical and in the orthopedic departments special inquiries relating to the patient's occupation, to the material he handles, his possible exposure to dust or fumes or to special strains, are investigated as a matter of routine. Moreover, intensive work on the 147 cases of lead poisoning seen at the hospital since 1908 and on certain other points is being done through Miss Holton, of the social service department. So far as we know, this is the first systematic work in industrial disease undertaken by any American hospital.

MEDICAL STAFF CONSULTATIONS.—Beginning with October of the past year, weekly staff consultations have been held in the medical wards. Hereby the judgment of the whole staff is, so far as possible, focused on a few of the more difficult problems of diagnosis and treatment occurring in the patients then in the wards. A patient about whom either service has felt any doubt, either as regards what is the matter or what is to be done, has thus the benefit of an opinion from both chiefs of service and from the visiting physicians of both services. The pathologist of the hospital, Dr. Wright, has also been a regular attendant on these consultations, and has given valuable help. The assistant visiting physicians are also invited, and some of them have attended every meeting. These meetings occur each Wednesday, from 11 to 1 o'clock. The opinion of each of those present is written down, and, at one of the subsequent meetings, the correctness or incorrectness of these opinions can generally be checked up.

SPECIAL ASSIGNMENTS.—In the surgical services the system of assigning one disease or a group of diseases to a single man for periods of one year or more appears to be working satisfactorily, though it is thought by some of the surgeons that fewer such assignments should be made in the future. To some extent a similar system is being tried out in the laryngological department and in the department of pediatrics.

TECHNICIANS.—The system developed by Dr. Wright in the pathological department, of training and employing as technicians young women who are without previous medical or technical knowledge, seems to have worked admirably. During the past year 5,502 Wassermann reactions were tested with the help of these technicians, under Dr. Wright's supervision. (In 1912 the number corresponding was 2,262.) During the same period 1,475 tests of complement fixation in gonococcus infections were also made.

CHEMICAL LABORATORY.—During the past year Dr. Otto Folin, professor of biological chemistry at the Harvard medical school, has been appointed chemist, and with his assistant, Dr. Willey Denis, has been responsible for the more important chemical research work and chemical study required in selected cases among the patients in the hospital. The hospital is to be congratulated on securing the services of so eminent a chemist as Dr. Folin.

FEES IN THE OUT-PATIENT DEPARTMENT.—Up to March 1, 1913, the fee charged to all out-patients for some years had been 10 cents for each visit. For the remainder of the year the fee charged was 25 cents for the first visit, and 10 cents for each subsequent visit; children under sixteen years. 10 cents for the first visit and for all subsequent visits. Naturally, in suitable cases, all fees are remitted. This change was made simultaneously with a similar change by the Boston Dispensary, and has produced no diminution in the number of patients coming to our clinics.

HOSPITAL BULLETIN.—Beginning December 10, the Hospital now issues to its staff, trustees, and friends of the hospital a bulletin containing notes of new rules, appointments, meetings, and other matters of interest. This bulletin is issued as often as there is anything of importance to say, and serves to keep all of those who work for the hospital in touch with what is going on in the different departments.

LIST OF ABBREVIATIONS AND SYMBOLS.—The records of the Massachusetts General Hospital have been kept with exceptional care and thoroughness for many years, but now and then it is difficult to use them because there occur unexplained abbreviations or symbols on the charts or in the body of the record. These were current for a few years and were then understood by everyone, but soon after were dropped and forgotten. To guard against such inconvenience or loss of valuable recorded matter in the future, the hospital has collected and printed during this year a list of all abbreviations and symbols which are to be allowed in the writing of hospital records. A copy of this list is to be bound at the end of each bound volume of records.

NOMENCLATURE AND CLASSIFICATION OF DISEASES.—Up to the present time three systems of nomenclature have been in use by the hospital—that long employed in the wards, that more recently drawn up for the out-patient cases, and that employed in the pathological department. These differences made it difficult to study yearly variations in each disease treated at the hospital, and led to confusion in other years. In view of this a committee was appointed during the past year to draw up a new classification and terminology for the use of the entire hospital. This has been done after consulting all the available classifications made elsewhere. Our own classification recently printed can be used in connection with the international list of causes of death, though our list necessarily contains names of many diseases not listed among causes of death.

By the use of a specific number system, each number corresponding to a given disease or a group of allied diseases, comparison can now be made between our statistics and those of anybody who uses the international classification. Our own statistics will, we hope, be materially improved by this new arrangement.

HOSPITAL COURSES FOR PRACTITIONERS.—For several years past the hospital has been developing a system of teaching offered to local practitioners and others living at a greater distance. These courses are so low-priced as to be practically free demonstrations. The fee merely covers the cost of material and attendants at the hospital. These courses have been largely attended.

The medical courses, given by Drs. William H. Smith, Roger I. Lee, and Oscar Richardson, were attended by 67 and by 41 men respectively. The surgical courses, offered by Dr. Charles L. Scudder and Dr. Hugh Cabot, each drew 30 men. Dr. E. G. Brackett's course in orthopedic surgery drew 20 men. The hospital thus fulfills its duties to practitioners not connected with its staff by making available for their use the unusual clinical opportunities of its wards. These opportunities are eagerly grasped, some practitioners making weekly journeys to the hospital from cities outside Massachusetts.

PLANS AND POSSIBILITIES NOT YET REALIZED.—The need of extensions, or further developments of the hospital work, is constantly felt by all of those actively engaged in its service. Of the new buildings, need of which has been long recognized, plans have been completed for the administration building, which will be the next to be finished. A new ward for the treatment of fractures has been proposed and discussed; also new medical wards and a new pediatric ward. We have space enough on our land for all these extensions, but as yet sufficient funds are not in sight.

For a similar reason—lack of funds—we have been unable so far to meet the pressing need of an evening clinic, to serve those who must work during the daytime or lose much needed pay if they leave their work to attend a morning or afternoon clinic. But for a similar lack of funds a clinic for the mental examination and treatment of juvenile delinquents would be established, as the need of such a clinic has been pointed out from numerous authoritative sources.

Perhaps the most important point leading to the success and usefulness of our executive committee is that it

[1] The term "resident physician" at the Massachusetts General Hospital corresponds to the term superintendent as ordinarily used.

has met not only regularly, but frequently, and has sat each time long enough to clear up, so far as possible, any matters under discussion. Meetings occur at a scheduled hour each week; they have rarely been omitted because of lack of urgent business, and, nearly as often as omitted, extra meetings have been called for special purposes. The meetings have lasted at least an hour, often two hours, sometimes longer. This means, of course, a large sacrifice of time and a good deal of thought on the part of the general executive committee, but has given the members of the committee a degree of familiarity with the multiple activities of the hospital and with the bearing of matters in their own departments on other departments and on general hospital matters—in short, a power of impersonal viewing of the questions that they have to act on, and an education in deciding them with some wisdom that they could not otherwise have secured, and without which they could not have failed to do badly many of the things that they have been called on to do.

SOME FUNCTIONS OF SOCIAL WORK IN HOSPITALS.[1]

The Social Worker Is a Member of the Hospital Team—A Part of the Machinery to Turn Out a Finished Product —Her Value Reducible to Dollars.

BY RICHARD C. CABOT, M. D., BOSTON.

I want to begin by stating some of the things that social work in hospitals does not or should not undertake. In the first place, it is not nursing. It is not trying to do any portion of medical work, either that ordinarily done by physicians or that ordinarily done by nurses. It does not undertake to interfere with any one else's job.

In the second place, social work in hospitals does not concern itself with the relief of all hospital patients who are in trouble, or even all who are piteously poor. It is concerned only with those whose poverty is the cause, or an important cause, of their illness. The hospital social worker is not a district agent of the Associated Charities or of any other charity. She is an agent of the hospital itself, and her prime job is to perform such social analyses and give such social treatment as shall assist in the diagnosis and treatment of disease. She is there, like everyone else who serves the hospital, to assist in the management and alleviation of sickness. She is part of the diagnostic and therapeutic outfit of the hospital. And yet she is not a nurse or a doctor.

If, then, we are asked for a more specific and detailed account of what she does, I should say that she follows up and finishes up various lines of diagnosis or treatment otherwise left unfinished or unknown by the physicians and nurses. Just here come in the most convincing reasons for her presence: (1) no one doubts that a good job ought to be finished in case it is begun at all; (2) hospital work is undoubtedly a good job; (3) but hospital work is now begun and left unfinished—left hanging in the air, as it were—because of the lack of social work to supplement and complete it.

INDUSTRIAL DISEASE.

Whoever takes the histories of hospital patients almost always puts down some word or phrase to represent the "occupation" of the patient. In so doing he has begun an inquiry into the possible industrial factors in the patient's malady. Such an inquiry may be of great value for diagnosis and treatment, but it is almost always left in so fragmentary a condition as to be useless. It needs to be supplemented and finished in order to be of value. Thus many a patient is listed in hospital records as a "laborer" or "factory worker." Such phrases are not worth anything. One needs to know what kind of a laborer, what kind of a factory worker, the patient is. Otherwise we do not know whether he handles any poisonous substance, whether he breathes any poisonous dust, whether he is exposed to any sort of dangerous strain. Now, as it happens at the present time, the medical students who write the histories of hospital patients are entirely ignorant of industrial diseases. They do not know enough even to ask the proper questions regarding the patient's occupation and its bearing on his illness. Moreover, the visiting phycians, who are supposed to study and criticise these records, rarely know enough about industrial disease to do so. The social worker, on the other hand, by reason of her social training, has a particular interest in occupation so far as it may bear on disease, and, if she is properly trained, she can develop the industrial information obtained in embryo by the physician.

At the Massachusetts General Hospital we have one worker especially trained in industrial disease by Drs. Edsall and Linenthal of our staff. She has begun the work of reforming our hospital records. Every hospital in the country needs a similar reform in its records, which are now being searched in vain by students of industrial disease, by industrial and legislative committees, for the information which they ought to contain and so far do not contain. Our worker in industrial disease is also in very close touch with the third-year medical students, who are taking histories in the out-patient department, and is teaching them the essentials of history taking as it relates to industrial disease.

Her work also extends to the following up of known cases of industrial disease, to see whether they have understood the nature of their trouble, the precautions to be taken against it, and the possible means of cure. A recent investigation of nearly 150 cases of lead poisoning seen at the out-patient department of the Massachusetts General Hospital showed that only a small percentage of them had received any adequate instruction as to the nature of their trouble and the precautions to be taken against further attacks.

The social worker is also concerned to discover cases of industrial disease among those who have *not* come to the hospital at all. Her clew to the existence of such nests of patients is obtained from the few sample patients who *do* come to the hospital. Thus every case of lead poisoning means more cases at home, more cases in the factory, just as every case of syphilis or typhoid fever is itself a symptom pointing to the presence of other cases. The necessity for such follow-up work, extending to the persons who do not come to the hospital at all, has long been recognized in relation to tuberculosis, but has yet to be recognized on any large scale by the hospitals of this country in industrial disease. To treat the single patient with lead poisoning who is sick enough to recognize his symptoms and to come to the hospital is a good beginning. But from the point of view of thorough medical work it is *only* a beginning. It constitutes evidence of a focus of poisoning, of a nest of trouble, which it is quite inexcusable for a modern hospital to leave unexplored. Such exploration, which carries out into the community the hospital's campaign against disease, is an important function of social workers.

But, if the hospital is to take itself seriously as a factor in the prevention as well as in the cure of disease, it must constantly do *educational work* in relation to industrial

[1]Symposium with Dr. Edsall, read before the Philadelphia Pediatric Society, June 5th, 1914.

disease as well as in other fields. At the Massachusetts General Hospital we have prepared and sent out circulars of information regarding the dangers of lead poisoning and the methods of its prevention. We send these circulars to all the men in the lead-poisoned trades within the boundaries of Massachusetts—to all painters and typesetters. By addresses and circulars we try to spread similar information among labor unions and employers—for example, among those who are likely to employ a painter in their own households. I was quite amazed myself to find how ignorant I was regarding my duties as an employer when I had engaged a man to do some painting in my own house. The duty to provide a place where the painter can wash his hands, and where he can eat his luncheon away from the neighborhood of lead-bearing dust, are duties which, I venture to say, very few physicians or other citizens who employ painters have ever recognized. It is through our social worker that we have come to be a little less blind in this respect.

WORK FOR THE HANDICAPPED.

The hospital begins a good job when it amputates the crushed leg of a patient who has been run over in a railway accident. But it is the business of someone to see that patient through his troubles; not merely to see that his wound heals properly, but that he has a proper-fitting artificial leg and that he himself is fitted back again into the industrial world. The job is not done until he is again a wage earner. Obviously this sort of follow-up work goes beyond the function of the hospital physician and the hospital nurse. It must be carried out by someone well versed in the resources which the community contains for rehabilitating such a sufferer and putting him on his feet again in the financial as well as in the physical sense. This is an expert job, requiring a knowledge (1) of the industries in the neighborhood, of their individual processes and parts capable of being taken up by a person handicapped in one or another way; but, (2) moreover and chiefly, a knowledge of the *psychology of the unemployed*, of the types and stages of mental and moral deterioration which inevitably occur when a healthy man is thrown out of employment by an accident, and surrounded by the condolences and luxuries which his friends naturally consider to be proper. Such a man is very likely to take to drink, not only because he has nothing else to do, but because a drink is the form of consolation most frequently offered him by well-meaning fellow-workmen.

To find work for the handicapped is very difficult, and the effort has failed in most of the places where it has been undertaken. That it has succeeded at the Massachusetts General Hospital is due chiefly to the fact that we have selected with the greatest care from among the gross total of handicapped persons the few for whom we could reasonably hope to do something. We have excluded from the first all attempt to help those whose injury or illness made them really unfit for any work whatsoever. This group, *the incapacitated, should be sharply distinguished from the handicapped*—i. e., from those who are still fit for work, although in need of social skill to fit them back into the industrial machinery. At the other extreme are those handicapped persons, by no means rare, who find no difficulty in obtaining work for themselves without the aid of any outsider. Somewhere between the two extremes just suggested there is a group of persons who are not incapacitated, yet not capable of finding work for themselves. Many of these can be helped to find a job, and, what is far more important, to keep it when once they have found it; for the great majority of them grow discouraged after a little, and have to be bolstered up throughout the first six months or year of their work.

Our worker for the handicapped, Miss Grace S. Harper, has permanently placed handicapped persons aggregating a total of $6,500 in wages during a single year's work. This is nearly six times the value of her salary, and represents a profit of 600 percent on the investment.

WORK WITH CASES OF INFECTIOUS DISEASE (TUBERCULOSIS, SYPHILIS, GONORRHEA, SCABIES, PEDICULOSIS, TRICHINIASIS).

Of course it is not the function of the social service worker either to diagnose or to treat infectious disease. It is her work (*a*) to find the focus of infection, (*b*) to check the spread of infection, (*c*) to teach prevention, and (*d*) to get treatment for chronic or "uninteresting" patients.

If the father or the mother of a family is found to be tuberculous, it is the business of the social worker to get hold of the children of that family and to have them examined at the hospital, no matter how healthy they may feel themselves to be. In this way a good many cases of incipient tuberculosis may be nipped in the bud. The same is true with syphilis, though the activities for checking the spread of syphilitic infection within families and within neighborhoods are as yet in their infancy. We have one worker in our syphilis clinic whose chief duties are in this field. In connection with such duties it is her privilege to teach prevention as well as to check the spread of the disease.

The hospital begins in a satisfactory way the work of attending to such patients. It makes the diagnosis and states what should be done, but it does not finish the job. It does not see that its treatment is carried out; it does not see that the patient has the necessary weapons—mental, moral, and financial—which are needed to carry it out. It does not send out scouts to detect the enemy while he is still in the distance, in the home, school, or factory.

DRUG HABITS.

From among the innumerable cases of alcoholism and morphine habit seen in all large clinics, it is the business of the social worker to select the relatively small number which are still in a curable stage, and to bring to bear on their troubles such resources as the community contains. These resources may be institutional, personal, financial, religious. I am under no illusions regarding the difficulty of attacking such habits. I know well that under the conditions in which we meet them in hospital work we can seldom accomplish anything with our present knowledge and our present resources. But we must search for the early and curable cases as the surgeon searches for early and curable cases of cancer.

CARDIAC DISEASE.

Most hospitals are alert and interested in the diagnosis of heart troubles and in their treatment so long as they are in the acute stage; but the hospital, as a rule, leaves its job unfinished in this as in most other diseases. What happens to the child with rheumatic heart disease after he leaves our wards, or after his mother takes him home from the out-patient department with the diagnosis and a bottle of medicine? As a rule no one knows, and therefore no one cares. Yet the whole future life of that child may depend on his being guarded for months from overexertion and from hygienic errors such as favor the reinfection of his heart. We have one worker whose duty it is to follow cardiac cases to their homes, to explain and

illustrate in detail the restraints and precautions which are necessary if the child is to escape repeated attacks of cardiac infection.

The industrial future of such children is hopeless unless they are given special educational opportunities. They must learn some trade which can be carried out without severe muscular exertion. In later life it will be impossible to teach them such a trade, and, if they once get started on work requiring muscular effort, it may be impossible to switch them into any more suitable work.

SEX PROBLEMS.

People have talked so much and so unwisely of these matters in the last few years, that I shall say very little. It must be obvious to anyone who knows anything of hospital work that such problems are constantly arising in connection with those who are treated in hospitals. It must be equally obvious that we are not doing anything of any importance to deal with these problems, and that the physicians and nurses are unfitted, both by their training and their other duties, for any such work. Clearly the good work which the hospital has begun when it makes a diagnosis of venereal disease or of pregnancy in an unmarried woman must be finished up in part by social workers.

SICK BABIES AND THEIR MOTHERS.

It needs very little argument to see that a pediatric clinic which has no means of inspecting and regulating the home care of children is an especially striking example of a good job well begun, but left in the middle. Almost all our better pediatric clinics now have nurses or social workers attached to them, and the difficulty is that where such work is done by a nurse she very seldom gets beyond the purely medical aspects of the problem. She seldom appreciates that the baby's diet may be improper, not only from the mother's ignorance, but from the father's lack of employment, or from one or another family problem such as can be understood only by those who are accustomed to study the history and fortune of the family in all its members.

THE REEDUCATION OF THE NEURASTHENIC.

The hospital makes the diagnosis, but, as a rule, it does nothing more for neurasthenics. The conditions under which help can be given to such sufferers are not the conditions to be found in hospital clinics. One needs time, privacy, intimate acquaintance with the individual and his family, before anything can be accomplished. It is not a medical job. Medicine and surgery have no considerable part in it. Of course, general hygiene is of importance, but any social worker can learn and apply the simple rules which make up almost the whole of the specifically medical-hygienic treatment of such cases. Beyond that the treatment of the neurasthenic is a problem of personality, which no one profession is adequate to solve, but which the social worker can often deal with far more successfully than the physician or nurse. The neurasthenic must work, and the problems of occupation are the daily study of the social worker, not only in neurasthenics, but in all sorts of people. The problems of recreation, of affection and family life, of religious life, are also most familiar to the social worker and most unfamiliar, as a rule, to the hospital physician and nurse. There is no class of sufferers for whom more can be accomplished than these neurasthenics. Organic disease of the heart, lung, liver, kidney, or stomach presents itself at a hospital ordinarily in forms for which we can do very little. We can only patch up the sufferer; we cannot put him back into the industrial world. Many a neurasthenic, on the other hand, who is totally disabled by his sufferings can be really put upon his feet again and restored to happiness and to usefulness, if not to complete health. All this, however, can be accomplished only when a great deal of time can be given to a few sufferers, and when all the aspects of the sufferer's life, not merely its medical aspects, are sympathetically studied and dealt with.

PARALLELISM BETWEEN THE X-RAY DEPARTMENT AND THE SOCIAL SERVICE DEPARTMENT OF A HOSPITAL.

The x-ray department exists in order to assist in the diagnosis and treatment of disease. To it are delegated certain portions both in the investigation and in the management of disease—portions with which the physician and the nurse are not able to deal. Without an x-ray department a modern hospital is seriously incomplete. All of this is clearly true of a social service department, as I have been exemplifying in previous paragraphs. What I wish just now to emphasize is this: a social service department should be no more independent of the medical than the x-ray department. In most hospitals at the present time, when the doctor refers a patient to the social service department, he washes his hands of that patient and loses interest in him. But when he refers a patient to the x-ray department, he inquires next day what they have found and what they advise. The physician has no idea of turning over the patient wholly to the x-ray department. He wants the advice and assistance of that department, but he fully intends to correlate the data so obtained with what he himself knows and plans for the patient. So it should be with social service work. The physician should use the social service department as he uses the x-ray department—to assist him in the diagnosis and treatment of his cases—but he should always keep control of the patient and direct the investigations even where he is unable to attend to them personally. Unless this is so, the work of the social service department is largely wasted, for I cannot too often emphasize that the work of this department is a part of the medical work, and not a separate undertaking. We physicians know how serious are the mistakes which arise if the x-ray department undertakes to make its diagnoses and recommend treatment, unguided and unassisted by the physicians and surgeons of the hospital. X-ray data and social data are of the greatest importance only if they are correlated with the other facts of the patient's history and physical examination. Without that they are often useless. It is a doctor's business to familiarize himself with the social facts and to use them. Otherwise the money spent in the salaries of social workers is wasted.

SUPERFICIALITY OF SOCIAL SERVICE WITHOUT MEDICAL LEADERSHIP.

Physicians and nurses are very familiar with the fact that one cannot understand the heart without knowing what is going on in the brain, stomach, and kidneys. The interdependence of all these organs is a matter of course. Because there is a similar interdependence between the data obtained by history, by physical examination, by x-ray work, by exploratory operation, and the data obtained from the studies of social workers who follow up the patient's life both on the physical side and in the home, we get superficial and unsatisfactory results from hospital social service work unless the doctor and the social worker are in constant touch with each other about the individual cases day by day. Since Darwin's time no man of science expects to understand an individual without understanding his environment, but in hospital work we see a great deal of the individual and very little of the

environment. All that we learn of the latter comes from the rather unsatisfactory replies of the sick man and his worried friends. But we are limited in our study of patients in hospital wards not only by our ignorance of their environment, but by our very considerable ignorance of their mentality. The hospital routine is well calculated to obtain all the accessible knowledge of the patient's physique and physical history, but the mental aspect of his stomach trouble, his lung trouble, his intestinal trouble, as well as of his obviously nervous maladies, can rarely be understood when the patient is isolated from his ordinary surroundings and habits, and pinioned in a hospital bed. He shows often as little of his normal mental activities as an animal in confinement or a prisoner behind the bars.

In order to understand a hospital patient's disease we should know:

1. The individual
   - (a) Physically
     - Organs and functions.
     - Habits.
   - (b) Mentally
     - Habits.
     - Interests.
     - Abilities.
     - Fears, worries, etc.
2. His environment
   - (a) Physically
     - Food and clothes.
     - Housing.
     - Work conditions.
     - School conditions.
     - Income and outgo.
   - (b) Mentally
     - Family and friends.
     - Workmates.
     - Schoolmates.
     - Recreation.
     - Religion.

But in practice we know only a quarter of this—his physical organs, functions, and habits. In order to get any considerable portion of the knowledge which we need if we are to understand him and treat him properly, we must investigate his mentality and his mental and physical environment through the help of social workers, and, when it comes to treatment, we must modify his mentality, his physical and mental environment, as well as the conditions of his organs and tissues; else the money subscribed by private or public agencies and the labors of physicians and nurses are expended in many cases with no adequate or proportional result.

SUMMARY AND CONCLUSION.

The social worker is of value as a member of a team—as a cog in the hospital machinery—not as a separate extramural institution or as an independent entity. She is likely to do fully as much harm as good unless the physicians of the hospital themselves supervise her, lead her, lay out for her the work she is to do and inspect it. Like the laboratory man and the x-ray expert, she should be under the direction of the hospital staff, reporting to the staff, and guided both in her investigations and in her remedial efforts by that staff.

Dr. G. K. Binkley, of Orwigsburg, Pa., has approved plans for a general hospital he is to erect at Schuylkill Haven, Pa. The hospital will eventually comprise five fireproof buildings of the bungalow type, but only one of these structures, costing $25,000, will be erected at this time. Dr. Binkley has announced that at his death the institution is to become the property of the Southern Schuylkill Medical Society, of which he is president.

A $60,000 bond issue has been ordered by the city of Buffalo, N. Y., for improvements at the J. N. Adams Hospital.

"Conference of Charities" to Discuss Medical Topics

The National Conference of Charities and Correction will hold its forty-second annual meeting at Baltimore, Md., May 12th to 19th. On the program are the names of many of the leading charity workers and penologists of the country, including Prof. Henry R. Saeger, of Columbia University, who will give an address on "Causes and Remedies of Unemployment." Dr. Richard C. Cabot, of Boston, will preside as chairman of the section on "Health" and the program of this section will include a series of discussions on the social responsibilities of the hospital and practical methods of social work in connection with hospitals. The chief speaker will be Dr. William H. Welch, of Johns Hopkins Hospital. Other speakers on the program will be Dr. Charles P. Emerson, dean of the Indiana University Medical School; Dr. Katherine Bement David, Commissioner of Correction of the City of New York; Dr. Walter E. Fernald, superintendent of the Massachusetts School for Feeble-Minded; and Dr. Martin W. Barr, superintendent of the Pennsylvania School for the Feeble-Minded.

The meeting will be held under the presidency of Mrs. John H. Glenn, of New York, the second woman president it has ever had.

Twilight Sleep

The City Hospital of St. Louis, Mo., will try out "twilight sleep" in its maternity wards.

The Michael Reese Hospital, Chicago, Ill., after a series of forty tests, has announced that they will apply "twilight sleep" only with the written consent of the mother, in which she absolves the hospital from any responsibility of injury to either herself or child.

The reason given for this precautionary measure is that the Michael Reese staff has already tried twilight sleep exactly in accord with the Freiburg method in over forty cases and is not impressed with its desirability.

Let us remind ourselves once more that it is the little things that count. The worst surgery in the world can be done in a hospital and the noisy element of the public will know little about it and care less; but if you serve bad meals, even to free patients, or have dirty sheets on the beds, there will be a howl the echo of which will come back to you from some telling quarter. A clean house, neat beds, a few rugs and flowers in cozy nooks where patients and their friends may visit, and well prepared and promptly served meals, have frequently been assets that have made for success in hospitals whose ideals in the practice of medicine have been obsolete for half a century. Look to the little things.

Just because your medical men seem to be getting along without much, if any, scientific work, doesn't excuse you from insisting upon it. A good hospital administrator will inspire the staff to do the best work of which they are capable, and will often suggest little schemes of helpfulness. The young, well-trained men who have recently come out of internship in a good hospital, and who are hanging around the institution hungry and begging for work, will always be glad to help the older men; and, inspired by your own spirit of progress, energy, and push, younger and older men working together can often raise an institution out of the doldrums, and make of it an up-and-going concern. Rally your forces and lead the fight; there will be followers into the fray.

Funds have been raised at Miami, Fla., for a new city hospital.

CURRENT HOSPITAL LITERATURE

Albert Allemann, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Value of External Heat to Ill Babies. Guy's Hospital Gaz., Lond., 1914, September 12.

A method of maintaining external warmth of a baby whilst allowing it fresh air to breathe is now adopted in Guy's Hospital. A blanket covers the infant to the neck. The face is exposed to the ordinary fresh air of the ward. A small cradle being placed outside the blanket covering the child's body, within the cradle are hung some ordinary electric lights. The cradle is covered with one or more blankets, which are well tucked in around the bed. The electric switch is turned on, and the temperature within the cradle watched by means of a thermometer. This treatment is most beneficial in marasmus, diarrhœa, vomiting with a tendency to collapse, ordinary bronchitis without high fever, and in many other similar conditions. The heat loss prevented by it does much to hasten recovery of the patient. This treatment is contraindicated in conditions of high fever.

An Institution of Social Aid. The Obstetrical Service in Rome (Una istituzione di assistenza sociale. La guardia ostetrica di Roma). Rivista ospedal., Roma, 1914, V, No. 10.

This service was organized in 1907 by Dr. Pestalozza, director of the Royal Obstetrico-Gynecological Clinic. The means were provided by the queen dowager and some benevolent organizations in Rome. The institution is intended to assist poor women who are in expectation of childbirth. These women call at the obstetrical clinic before the time of delivery. They are examined by an experienced obstetrician and if the conditions indicate a normal birth the woman is sent home with the understanding that she will receive proper attention by the obstetrical service. If the conditions indicate an abnormal birth the woman is directed to the lying-in hospital. In the great majority of cases the women can be sent to their homes, where they receive due care and attention by the Service. A midwife living in the neighborhood of such a woman is assigned to her and if the woman has any other children they are taken care of. When labor approaches the Service is notified, which then sends an obstetrician to attend the woman. During the six years ending with December, 1913, 6,966 women were thus delivered at their homes and 4,820 were cared for at the lying-in hospital.

The Hospital at Medebach (Das Krankenhaus zu Medebach). Heilanstalt, Leipzig, 1914, X, No. 48.

Medebach is a town of 2,500 inhabitants. The architect had to solve the problem of building a hospital with twenty-eight beds and an isolation ward with six beds at the lowest possible cost. Considering that all the building material had to be brought by rail from a great distance, he did well in his task, as the total building expenses amount to only Mk. 103,500 ($25,625). The ground plan has the form of a T. The main front with the sickrooms is on the south side of the building, and the operation and other additional rooms are on the north side. The main entrance is on the north front. To the right of the entrance is a first aid room, to the left, separated by a small anteroom, the kitchen and storerooms. The first story contains also the rooms for medical baths. In the basement is the central heating plant, laundry, etc. The second and third stories contain the sickrooms ranged along the south front. On the north side of the second floor is the operation room, an x-ray room, elevator, closets, etc. The north side of the third floor contains a chapel, and a hall and dining room for the nurses. The nurses' rooms are in the attic. The isolation ward is attached to the main building on the west side and has its own entrance.

On Sewage Disinfection, System Braun (Ueber Abwasser-Desinfektion, System Braun). By W. Bach, Archit. Heilanstalt, Leipzig, 1914, IX, No. 22.

The war has greatly increased the danger from infectious diseases. The disinfection of sewage from hospitals, especially where the latter is carried into public watercourses, is therefore of great importance. Dunbar has shown that the pathogenic organisms are not killed by a biological purification, though their vitality is weakened by the destruction of the mucous envelope. To prevent the dissemination of typhoid, dysentery, cholera, etc., by hospital sewage, an efficient system of disinfection must be employed. The best and at the same time the cheapest means of disinfection is chlorate of lime, containing 30 to 33 percent of active chlorine. This has been proved by the experiments of Phelps in Boston and Clark and Gage in Lawrence, Mass. That even very small quantities of chlorate of lime produce sterilization has been shown by the experiments made at the disinfection plant in Philadelphia in 1913. But as the sewage flows off very irregularly it is difficult to mix properly at all times the necessary quantity of the disinfecting agent with the sewage. Architect Braun, in Ulm, has now constructed a mixing apparatus which is thoroughly efficient. This apparatus consists in a collecting tank holding about twenty gallons. As the sewage gradually fills this tank the disinfecting fluid is mixed with it drop by drop. A floating device regulates the escape of the disinfectant. As soon as the tank is full it empties itself automatically and is then ready to receive another quantity of sewage.

Hospitals in the Middle Ages (Krankenhäuser in Mittelalter). Dr. C. Haendecke. Deutsche Krankenpfl.-Zeitung, Berl., 1914, XVII, No. 20.

One of the chief merits of the Middle Ages was the recognition of the fact that it is the moral duty of man to assist poor and sick members of human society. It is therefore natural that the church should consider this one of her special fields. The church spirit predominated in the hospitals of those times and the care of the soul was thought more important than that of the body. The most common form of these institutions were the Holy Ghost Hospitals, in France called Hotel-Dieu. All sick people were received in these hospitals except lepers, plague patients, cripples, blind people and lying-in women. Not until much later were hospitals established for lying-in women, blind persons and abandoned children. But there were also many old men and women of means who passed

the last years of their lives in hospitals, where they were taken care of, and to which they usually willed their property. Most hospitals were supported by such donations and other benevolent gifts. All hospitals had regular attending physicians and nurses. The statutes of the Hotel Dieu at Paris of the year 1217 give us a good idea of the organization of these hospitals. These statutes are very similar to those of the Knights Templar. The personnel of the hospital comprised thirty lay brothers, four clericals, four presbyters, and twenty-five lay sisters. They all had to take the vow of chastity, obedience and poverty.

The Best Training for the Hospital Corps for the Fleet. F. E. McCullough, Surgeon, U. S. Navy. Mil. Surgeon, Chicago, January, 1915.

The importance of academic and vocational training in the navy, as emphasized by Secretary Daniels, made it possible to evolve and establish a system for training the hospital corps of the navy, which is producing excellent results. As the writer states, while it is by no means new in the navy, vocational training is an expansion of a successful system of training that has existed at the naval academy to qualify officers of the line. A systematic course of instruction was already in effect as prescribed by general order. A training school at the Norfolk Naval Hospital was established in 1901, and removed to Washington in 1903, but was discontinued when the general order (requiring instruction at all hospitals, and on all larger ships) was issued. The training school for the hospital corps of the navy was established during the present year at the Naval Training Station, Newport, R. I., and experience has already demonstrated that no error of judgment was made in this selection. The ultimate and primary object of this training is to equip membership for duty with the fleet. The school is provided with all necessary equipment, and the curriculum as shown by its prospectus will include lectures upon anatomy and physiology, first-aid and emergency surgery, hygiene and sanitation, clerical duties, pharmacy, chemistry, materia medica and the action of drugs, toxicology, foods and cooking, litter and stretcher drill, and tent erection. The course will last six months. It is believed that the training school for the hospital corps of the navy established by the department, together with the instruction given by medical officers and the senior members of the hospital corps at naval hospitals and ships, will provide the best training for the hospital corps of the navy and that this corps, for many years noted for its efficiency, will maintain its high place among the naval services of the world.

Female Nurses in the Navy. Mary E. Smith. The Nurse, Jamestown, N. Y., 1915, II, 94.

In 1908 Congress authorized the formation of the Female Nurse Corps of the U. S. Navy. It consists of a superintendent of nurses, chief nurse, nurses and reserve nurses. They do not serve upon fighting ships, but render service in naval hospitals and in emergency in case of war upon hospital or ambulance ships. The regularity of institutional nursing with the possibility of travel, variety and advancement are advantages the corps offers. Other perquisites are that nurses' homes have been built at nearly all the hospitals, and they are thus insured comfort and privacy. They may be granted thirty days' leave with pay during each calendar year, or the leave may accumulate for three years. Applications are made to the Surgeon General, Navy Department, Washington, D. C. An applicant must be a graduate of a general hospital training school giving a course of instruction covering at least a period of two years. Appointments are for three years, after which, if desired, nurses are ordered home and expenses paid. A nurse usually serves at one of the large naval hospitals in this country, receiving the special instruction necessary for nursing in the navy. A day's duty is considered to be eight hours. At present there are built, or in course of construction, modern naval hospitals at Portsmouth, Chelsea, Newport, Brooklyn, Philadelphia, Annapolis, Washington, Norfolk, Mare Island, Bremerton, North Chicago, Honolulu, Cavite and Yokohama. These hospitals rank with the best in the world. Not all of them have resident women nurses, but they may be assigned to any of them by order of the Surgeon General, and nurses are detailed wherever they are needed.

The Care of the Sick in Modern Times (Zur heutigen Krankenversorgung). Dr. Naunyn. Deutsche Revue, Stuttgart, 1914, II, pp. 310-319.

The development of modern hospital construction and hospital service in Germany began about fifty years ago and has steadily progressed. In 1865 the hospitals of Berlin contained about 1,500 beds, or 22 beds for every 10,000 inhabitants. In 1910 Berlin had 52 beds for the same number of inhabitants. In those days the hospitals were intended to receive only people of small means. The wealthy people could not avail themselves of the services of a hospital and had to content themselves with home treatment, which is done, of course, under great disadvantages. For this reason a great number of private hospitals and sanatoriums sprang up. In those early days the people had still much prejudice against the hospitals, but a great change came about, when at the end of the seventies antiseptic surgery became general, and the terrors of an operation were no longer to be feared. As the antiseptic method could not properly be carried out at home the surgeons took their patients to the hospitals. Thus commenced the great era of modern hospital construction. The cities began to vie with each other in the establishment of luxurious and splendidly equipped hospitals. How the prejudices against the hospitals have disappeared is best shown by the fact that the married women of the wealthy classes go now to the hospital for childbirth. It is not necessary to dwell on the advantages of a hospital in operative and labor cases, but the hospital is also indispensable in a great number of special methods of treatment. In acute and especially infectious diseases the hospital presents great advantages over home treatment. The question of expenses is important. If we consider the salary of the nurse, the pay of a physician, the expenses for food, drugs, etc., the costs of the home treatment will under the most favorable circumstances amount to 15 or 20 marks per day. This amount may easily be doubled if a night nurse and special methods of treatment are required. The rates in hospitals vary greatly, but the expenses are in all cases much less than those of home treatment.

A Field Hospital in Belgium. J. H. Beavis and H. S. Souttar. Brit. M. J., Lond., 1915, I, 64.

The authors, who for the past three months have rendered service in a hospital within a few miles of the firing line, furnish interesting cases of surgery under such conditions. The British Field Hospital for Belgium began its work in Antwerp with a well-equipped hospital of 150 beds and a staff of 8 doctors, 20 nurses, and 5 dressers. In five weeks 500 Belgians and 70 British were admitted to its wards, in addition to a large number of slighter cases treated and sent on to other hospitals. On October 8, 1914, in view of the German occupation, the hospital had to leave Antwerp.

After a week in London to refit, a fresh start was made

at Furnes, where the hospital is still at work, acting as the official field hospital of the Belgian army. The hospital is established in the large Episcopal College of St. Joseph. It has accommodation for about 100 patients, although by the use of straw wards there have been housed as many as 150 on more than one occasion. The military authorities visit the wards daily and transfer to base hospitals at Calais and Dunkirk every patient who can be moved. The turnover is therefore very large, and has reached as many as 100 in one day. These evacuation arrangements enable the hospital to deal with a very large number of patients, though they make it somewhat difficult to follow any but a few special cases throughout their course.

It will thus be seen that the hospital has enjoyed all the advantages, and some of the dangers, of a well-equipped establishment close behind the fighting lines. It has also the immense advantage of a fleet of motor ambulances to bring the wounded direct from the trenches. An ambulance corps works in conjunction with the hospital, and brings the wounded in with the least possible delay. Most cases are received within the first twenty-four hours and in some instances they have reached the field hospital in less than an hour from the time of injury. There can be few hospitals so fortunately placed.

Lahasusu and Its Hospital. North Manchurian Plague Prevention Service Reports, 1911-1913. Cambridge, 1914, 136.

The director of the hospital and Dr. C. H. Luk Chun Hsuan furnish an interesting article on the village of Lahasusu (Lt. 47° 42′ N.; Lg. 132° 0′ E.). Lahasusu is situated on the southern or right bank of the River Sungari, about three miles before it winds round to join the Amur. Hence it is an important customs station for the Chinese Government, watching trading vessels, Chinese and Russian, plying on the river between Harbin and Blagovestchensk on one side, and Habarovsk on the other. The distance of Lahasusu from Harbin is 450 miles or 630 versts.

Lahasusu is so called from a name given to the place by some Fish-Skin Tartars, known locally by the name of Ho Che in Chinese or "goldi" in Russian, who settled here about the beginning of the Ta Ching Dynasty. "Laha" means straw-and-mud, and "susu" means a camp.

When it was decided to establish Plague Prevention Stations in North Manchuria in order to prevent a recurrence of an epidemic like that of 1910-1911, Lahasusu was one of five chosen, although it had never been visited by the plague. The main reason lies in the fact that it is an important calling station lying at the junction of the Amur and Sungari. In April, 1911, the Chinese and Russian authorities agreed to send medical expeditions conjointly to the Sungari and Amur regions to inquire into the existence of plague, and incidentally to enforce quarantine restrictions on vessels plying along those rivers. As a result the customs commissioner, after consultation with the Wai Wu Pu, despatched Dr. W. Kirk to Lahasusu to examine the vessels calling at that place, and the Russian railway authorities were invited to cooperate in this work. The latter, therefore, despatched a steamer to Lahasusu, fitted up as a hospital-ship, in charge of a medical man and two women nurses, in order to guard against the possible spread of infection into Russian territory lying further east. Plans were at the same time made for the construction of an isolation hospital at Lahasusu, and the sum of Rs. 20,000 was voted for the purpose by the viceroy of Manchuria, with the approval of Wai Wu Pu, the money to come from the Harbin customs revenue.

The site was chosen after consultation with the prefect, Mr. Chu Shou Ching, who bought the land, measuring about ten mu, for Rs. 682.58. The site is a good one, being on high ground at the curve of the Sungari before it joins the Amur, and two-thirds of a mile distant from the village. Dr. Kirk superintended the building operations, and Dr. C. H. Luk was appointed as his assistant after Dr. Young (of Canton) had left.

In June, 1911, the Chinese and Russian governments rescinded the quarantine regulations in force on the frontier between China and Russia, and the Russian hospital staff, who had been living on their ship, therefore left Lahasusu about June 15.

The hospital consists of:

(a) A two-storied block in the center for the medical officer. There are sixteen windows (all double); on the ground floor are four rooms, a dispensary, a waiting room, a consulting room and a laboratory; the top floor is divided into four rooms for the private use of the medical officer. The servants' quarters, consisting of a small block of four rooms, lie immediately behind the medical officer's quarters.

(b) Behind and on the western side are two blocks, one for plague cases and one for "suspect" cases. Each block contains twelve compartments, each eight by twelve, with a side corridor. These compartments are separated from one another by wooden partitions six feet high. Each compartment has a separate double window, so that there is abundance of light. Both the plague and "suspect" wards are built alike.

(c) On the eastern side are two more blocks for quarantine purposes. These are almost square buildings, each with two doors and twelve windows. Each block is divided into two large wards with a passage in the middle. Each ward accommodates ten persons. All the buildings have plank floors. The following table indicates the measurements:

	Doctor's Residence.	Plague and Suspect Blocks (each).	Quarantine Blocks (each).
Length in feet	32	69	34½
Breadth in feet	28	21¼	32
Number of wards	8 rooms	12 rooms	2
Size of each ward	..	5½x11½ ft.	11½x26 ft.
Number of windows	16	12	12

The hospital is perhaps the finest and most prominent building at Lahasusu, and commands a fine view of the two rivers—Sungari and Amur. Vessels going to and from Lahasusu pass it before reaching the village.

The New Dietary in the Spedale Maggiore of Bologna (Le nuove diete nello Spedale Maggiore di Bologna). G. Vannini. Bulletino d. scienze med., Bologna, 1914, LXXXV, No. 9.

The food of hospital patients has of late years been the subject of numerous investigations in Italy. As patients frequently complain about the diet, Dr. Masetti, director of the Bologna hospital, has arranged a new diet table. He aimed especially at satisfying the patients who frequently crave foods not provided by the ordinary hospital dietary. He substituted veal for a part of the beef, and introduced new ways of preparing the food in order to make it more palatable to the patients. Special attention is paid to a good, clean milk. Immediately after it is milked it is sterilized in copper vessels provided with a special spigot. The covered cans are carried to the various wards and the milk drawn, by means of the spigot, into sterilized pint bottles provided with a glass cover. The article is accompanied by complete diet tables. Table III shows the chemical composition of the various foods, their combustion value and their proteid, fat and hydrocarbon contents.

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DEPARTMENT *of* NURSING

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Annual Convention of the American Nurses' Association

The American Nurses' Association will hold its eighteenth annual convention in San Francisco, June 20-26, 1915. With this association are affiliated the National League of Nursing Education and the National Organization for Public Health Nursing, the three associations representing a membership of more than 25,000 nurses. The convention week will be opened by a special Sunday evening session, at which Dr. Aked will preach to the nurses assembled. Registration, important business meetings and a formal joint opening session will mark the proceedings for Monday. The four following days will be devoted to papers, discussions, sectional conferences and round tables, at which the problems of the three different bodies will be considered, sometimes in separate sessions, sometimes in large joint meetings. The program is not yet in its final form, but it promises to be of great interest and advantage to all. It is hoped that as the convention is held at the same time as those of the American Medical Association and the American Hospital Association, many nurse superintendents of hospitals can be present who could not otherwise attend two conventions, and that many nurses who are wives of physicians may attend the nursing meetings while their husbands are engrossed by their own duties. Then, too, the dates, late in June, will make it possible for vacations to be planned to include the convention and the Exposition.

This was the appointed year for the meeting of the International Council of Nurses, of which the American Nurses' Association is a part, but all plans for an international gathering have had to be laid aside on account of the war.

Two or three special nurses' trains will carry the delegates to the coast, one with interesting side trips, the others taking a more direct route. The outlook for a good attendance and for inspiring meetings is a hopeful one.

KATHARINE DEWITT, R. N., Secretary.

The Modern Hospital as an Educational Center.

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PAPER I.

It will perhaps seem unusual to some of the laity to consider the hospital in any other light than as an institution for the care of the sick. However, the thought of it as an educational center should be strange to no one, since within the walls of the hospital is found the modern school of nursing. The student nurses are concerned primarily with the care of the sick, but one of the most important duties of the school is to educate nurses so they

will be qualified to do the work that the future of preventive medicine demands.

The modern hospital, with its marvelous equipment, furnishes unusual opportunities for the education and training of the nurse of today. This is fortunate, since more and more nurses are being sought to fill positions as public health workers, and it is predicted by those who have an intimate knowledge of these affairs that the scope of work in this field will be constantly broadened. With this prediction also comes the complaint that the technical education of the nurse is not sufficiently sound. With this criticism in mind, it behooves the training school to develop its scheme of education to the point where it will be able to give to its students the thorough education that the nursing work of the future requires.

It is the idea of this paper to describe the type of work done in one school—not that it is thought the system is ideal, but because it is believed that the scheme has several good points.

The setting of a school is an important thing to consider. While all nurses realize that good schools frequently exist in poor buildings and where there is a lack of proper equipment, yet the better these are the greater are the chances for the development of a good school. This, of course, is only true if other things are equal.

The nursing in the new Barnes and St. Louis Children's Hospital is to be done by the department of nursing and social service of Washington University, under external conditions that approach the ideal. The buildings of these institutions, wonderfully located on the edge of Forest Park, are completely equipped and modern in all of their details. In these should be found an excellent opportunity for establishing a school of nursing on a firm educational basis.

In the children's hospital proper 100 beds are allotted to the care of infants and children. In a separate building are 40 beds for the care of contagious diseases. This building has been carefully planned, so that the work can be carried on with the greatest possible efficiency. An interesting feature in connection with the children's hospital is that in both of its divisions provision has been made for the care of private patients. In addition to this, and under the management of the same board, there is a beautiful convalescent home with 50 beds at Valley Park. This is about twenty miles out of the city, on top of a high hill, overlooking the Meramec river valley. For several years past convalescents have been sent out to the old house and have been wonderfully improved by their stay on the farm.

In the Barnes Hospital provision has been made for the maintenance of a general service. The private patients' pavilion has 45 beds, with the majority of its rooms overlooking the park. In addition to these there are 200 beds allotted to the surgical, medical, gynecological, and obstetrical services. For the present some of the beds in the surgical pavilion will be given over to the care of diseases of the special senses. On the corner of the block stand two eight-room houses which were to be torn down, but, since the provisions of the will which made the new buildings possible permits the admission of white patients only, the houses are to be used for the care of sick negroes. A building to be devoted to the housing of colored patients is soon to be erected and will be arranged to provide adequately for the different services.

In the main building are located well equipped examining and admitting rooms and divisions for mechano- and hydrotherapy, metabolism, and x-ray. The group of buildings, as it stands at present, is completed by that of the out-patient department. Here will be combined the dispensary work of the Barnes and children's hospitals. At present the average number of patients treated daily in the two dispensaries is about 250.

Appreciating the advantages in equipment and buildings, the faculty of the school of nursing has planned a careful course of study which it is hoped will prove efficient. Changes could be made in it which would bring the plan nearer to the ideal, but they must wait until certain fundamental things have been accomplished. The school year has been divided into two semesters, and the work planned out according to the following scheme:

JUNIORS.

First Semester.	Hours.	Second Semester.	Hours.
Practical nursing	90	Practical nursing	15
Anatomy	30	Physiology	30
Solutions	12	Dietetics	30
Drugs	15	English	15
Personal hygiene	12	Bandaging	10
Bacteriology	30	Urinalysis	6
Chemistry	30		
English	15		

INTERMEDIATES.

First Semester.	Hours.	Second Semester.	Hours.
Practical nursing	15	Practical nursing	15
General surgery	10	General medicine	10
Gynecology	5	Pediatrics	10
Pathology	5	Contagious diseases of children	3
Materia medica	15	Orthopedics	4
Massage and corrective gymnastics	15	Obstetrics	15
English	15	English	15

SENIORS.

First Semester.	Hours.	Second Semester.	Hours.
History of nursing and nursing ethics	15	History of nursing contemporaneous problems	15
English	15	English	15
Diseases of the special senses (eye, ear, skin, nose, and throat)	15	Diseases of the nervous system	6
Visiting nursing	4	Special lectures — field work in visiting nursing and social service.	
Social service	4		

For several reasons it has not been found possible to follow out this plan in all of its details. One of these is that it was planned to move the training school and medical school into the new buildings before the opening of the school year, and only the latter was moved. As a result it was impossible to carry on regular laboratory courses, and a great deal of the material the lecturers expected to use was unavailable. A second reason is that it was found necessary to receive the autumn class in small sections, and in consequence a large portion of the theoretical work has been irregular. In the future, however, it is hoped and expected that the course of study will be realized as planned and little by little improved. The instruction of the nurses is given by members of the faculties of the medical and training schools. In bacteriology, chemistry, and dietetics, regular lecture and laboratory periods will be given. The latter will be held in the laboratories of the medical school, which are located directly opposite the hospital buildings. These periods will be conducted by members of the medical school faculty. In anatomy a lecture, accompanied by a demonstration of materials from the dissecting laboratory of the medical school, is given, and followed by a quiz. The same general plan is followed in physiology, in which course it is hoped a great many interesting and valuable experiments will be demonstrated. For the study of the history of nursing no formal class will be formed. It is desired that the students outline and conduct the class for themselves, with some help from one of the members of the training school staff. Under the heading of special lectures will be taken up such subjects as deal directly with the work of the public departments

and private agencies for the betterment of living conditions. For these lectures it has been planned to bring the students of three schools together and to invite both lay and professional social workers to attend.

While a great deal of theoretical work has been required of the students, it has been found possible to give them ample time off duty for rest and study. Each nurse has three hours off duty daily, one-half day during the week, beginning at 1:30 p. m., and five and one-half hours on Sunday. In addition to this they usually have their class hour as well as their three hours off duty.

At present there is no preliminary course conducted in the school. It is believed that such a course is desirable both from the standpoint of the pupil and the school, and it is hoped that in the near future the work can be arranged in such a way that a preliminary course for probationers will be possible. Then it would seem advisable to give to the new students the largest portion of the theoretical work in the junior year, and have them do only such ward work as could be accredited as laboratory work in practical nursing.

One of the most interesting features of the work is the English courses offered. These classes are conducted by Dr. Sedgwick, of the department of English at Washington University. Course 1 is given to the junior class, and the first semester's work is devoted almost entirely to composition. In the second half of the year the same outline will be followed, and in addition the study of the modern short story will be taken up. The latter is designed to lead up to course 2, which is now being given to the members of the intermediate and senior classes. The aim of the second year's work is to develop an appreciation for better literature. Up to the present the work has been confined to the short story, although Dr. Sedgwick hopes soon to begin the study of the modern novel. When the course was first planned, $350 was set aside by the training school committee to cover the cost of instruction. When the character of the work to be pursued was discussed it was feared that it might be necessary to give up the original plan of forming a class in composition, because of the fact that each week forty or fifty themes must be corrected. But without hesitation the members of the committee came forward to say that the necessary money ($100) to pay a theme reader would be forthcoming. Then came a third question, that of books. But here again $50 was given to cover any necessary expenditure, making a total of $500 allowed for the teaching of English.

It is thought that this is an especially fine feature of the course given the students of this school, and one of the best things about it is the attitude of the pupils toward the work. In the beginning there were several complaints from nurses who thought they had had enough "baby English," but, when it was learned that the course was the equivalent of Freshman English, their attitude changed. Now they are thoroughly interested and are enjoying every minute of it. Another good feature of the class is that the nurses do not regard it as a burden, but look forward to the hour as one in which they will find relaxation and mental recreation. Additional books for this course are obtained from the traveling department of the Public Library.

Another interesting experiment under trial in this school is a week's work for probationers, under the direction of the social service workers. After the probationers have been in the school for about a month, they are sent to the social service department. The first day they go to the office, read reports and listen to conversations which take place there; then they are given a few simple instructions, and sent out to make calls, investigate cases, and write up the usual reports. They do this for a week. This plan is being pursued, not because it is expected that with such a short service they will learn to investigate a case thoroughly or to make a correct social diagnosis, but because it is believed that they will gain a new insight into the way in which a great many of their patients live and the great difficulties under which they labor. A large number of patients who come under observation in the hospital wards have a bad social environment, which is the great cause of their condition, and the week's experience should stimulate the imagination of the new nurse and make her more sympathetic and helpful than she would be otherwise.

A regular weekly class in singing has been inaugurated, primarily to provide rest and relaxation, and secondarily to prepare Christmas carols for singing in the wards. If the comments of the students can be trusted, they find the hour a very pleasant one.

To the above-mentioned classes another is soon to be added. Junior students will be enrolled in this one for instruction in corrective foot exercises. The class will be conducted by the resident masseuse, who is a graduate of the Posse School of Gymnastics and Massage. The necessity for such instruction was demonstrated by the orthopedic surgeon, who carefully examined the feet of all the new pupils. At his direction the class is to be divided into three sections, and the exercises will be carried out according to his instructions.

Suggestions for Laboratory Teaching of Anatomy in a Small School.

BY SUSIE A. WATSON, R. N.,
Instructor of Nurses, Peter Bent Brigham Hospital Training School for Nurses.

So much has been said and written during the last year or two about the laboratory method of teaching in the training schools that perhaps many of the small ones would like to bring it into more common practice if it could be done without much additional expense. Even a moderate sum seems large when the training school appropriation is scant. It is with such a school in mind that these suggestions for inexpensive work are made.

Besides money, another item to be considered in the small hospital is time. The staff may be small and teaching only one of many duties devolving upon the superintendent and her assistant. Everyone who uses this method admits that more time is required for careful preparation as well as for student supervision. The qualifications of the teacher may vary widely.

Anatomy is generally considered by pupils in training the most difficult subject, and yet by many it is held the most interesting. It is usually unlike the pupil's previous studies and the basis on which she may build may not be extensive. Therefore the opportunity to study for herself the organs about which she reads in her lesson will enable her to understand their workings better and extend this understanding by applying it to her own personal hygiene. The actual doing for herself is worth ten demonstrations by an instructor, because she carries away a more distinct memory of something in which she has been an actor rather than a mere spectator.

Microscopic work is worth much for studying tissues and structures of the body, but many schools have no microscopes, nor anyone with sufficient training to make their use an asset to the teaching. The student cannot remember what she has seen unless it has been clearly explained and she has had time enough to study the field,

and draw and name the parts. Under such conditions the study of and the copying of well selected pictures and diagrams would prove of greater value.

There is a wide range of material for selection in the meat market, and it is surprising how interested the butcher himself will become in saving good specimens if he is approached in the right way. The cost is trivial.

A painstaking student may follow written directions for dissection, aided by her anatomy text-book in identification without constant supervision, though her work must be frequently inspected and decisions verified.

Nearly every hospital possesses a skeleton. It has been found that making drawings of different bones is a valuable way of cultivating observation of details and remembering location and relation to other bones. An uncooked soup bone from the kitchen, split lengthwise, will give a good idea of the composition of a bone and the structure of a freely movable joint. The adhering parts will present examples of most of the tissues, which may be identified.

An examination of tripe and of the alimentary canal of a fowl will show the characteristic structure of the digestive tract, and tongue, liver, and pancreas are easy to obtain. The extent of the pupils' experiments in digestion may depend upon time, knowledge of physiological chemistry possessed by the instructor, and available material. At least salivary digestion may be easily proved because of the simplicity of starch and sugar tests and ready supply of saliva. It is more interesting than work with artificially made juices because more personal. Hawk's Physiological Chemistry gives directions for making artificial gastric and pancreatic juices; and somewhat less satisfactory results may be obtained from a combination of hydrochloric acid and pepsin in one case, and pancreatin in the other.

If a microscope can be obtained, examination of the pupil's own blood is interesting to her as well as important.

One can procure from the local butcher the heart and lungs of a sheep or calf, attached together with trachea, œsophagus and part of the diaphragm. These are apt to be mutilated by the meat inspector, unless they are ordered in advance and the purchaser's purpose is explained. However, they are seldom so damaged that one side at least of heart or lungs does not serve to demonstrate the action of the heart valves or filling of the lungs. Kidneys, too, are valuable to help make clear the complicated description in the text. One pupil, after she had dissected a split kidney, took great pleasure in making a clay model of one, wonderfully true to life. She did it outside of class hours, and solely because she wanted to show how well she understood the kidney from her laboratory work.

The butcher will split a calf's head with his cleaver so that the skull and brain may be examined. A dissection of the eyes of some animal will make clear the anatomy of the human eye, which, without this help, is confusing and easily forgotten. Frogs are not hard to get nor to dissect, and give a very good general idea of position of the organs in the body. Bigelow's Applied Biology offers many suggestions and directions for work which may be used to advantage.

The amount of equipment necessary depends upon the number of students at work at one time. A few articles may be used over and over by many students if the schedule is carefully arranged, and economy of storage space may be thus effected. For the work here outlined one can manage fairly well with newspapers for table covers, a few large white plates, two or three sharp paring knives instead of scalpels, ordinary scissors, and straws from a broom or culture sticks for probes. Dissecting forceps are desirable, though not absolutely necessary. Slides and cover slips should be on hand if a microscope were part of the equipment. Prepared slides of specimens, if desired, may be purchased from various supply houses at moderate cost. Two or three small funnels, filter paper, a saucepan, test tubes, which cost about thirty cents a dozen, and brushes, which cost about three cents apiece, will be needed. Pasteboard boxes may be used to stand the tubes in. Small glasses may be used in place of beakers. The reagents for the digestive experiments may be found in any hospital laboratory.

If other subjects are to be taught in the same manner a greater variety of apparatus will be needed for general laboratory use.

Urges Nurses to Know Experiences of Private Nursing.

The increasing importance of the intelligent nurse in the treatment of the sick was emphasized by Dr. Samuel Robinson, of Clifton Springs, who addressed the graduating class of Faxton Hospital Training School at the commencement exercises.

The real joy that they must have gained, he said, is in learning more of the whys of things rather than merely the why nots, as they have come toward the end of their hospital course. He pointed out that, while the nurse must be trained not to allow her curiosity to interfere with her work, yet the best nurse is always the one who has brains, and brains must know the reasons for things. Dr. Robinson declared that this curiosity to know the reason for treatment is commendable, particularly now that treatment is becoming more and more a matter of skillful management on the part of the nurse, who is entitled to know the reasons for what she is doing. "The best nurse knows the whys, but never becomes the doctor," declared Dr. Robinson, who urged the acquirement on the part of the nurse of a cooperative interest with the physician in the condition of the patient in order to be of the highest service to the doctor and to mankind.

Dr. Robinson warned against the danger of regarding graduation as the end of training for the profession of nursing, and said that the test of real work comes when, after some years of responsible practice, the nurse is willing to go back for post-graduate work in order to keep up to date with her profession. Particularly did Dr. Robinson urge the nurses not to cling indefinitely to hospital positions as the line of least resistance. He emphasized the importance of gaining self-reliance through the valuable training found in caring for the sick in their own homes under the scrutiny of anxious families. The ability thus gained by a nurse to maintain a tolerant equilibrium and to show a ready adaptability will win the respect and confidence of strangers among whom she may work.

Oliver Wendell Holmes' lines to the physician would seem equally applicable to the nurse:

> "And last, not least, in each perplexing case
> Learn the sweet magic of a cheerful face,
> Not always smiling, but at least serene.
> When grief and anguish cloud the anxious scene,
> Each look, each movement, every word and tone
> Should tell the sufferer you are all his own.
> Not the mere hireling, purchased to attend,
> But the warm, ready, self-supporting friend
> Whose genial presence in itself combines
> The best of tonics, cordials, anodynes."

A total expenditure of $500,000 has been authorized for the municipal hospital to be erected at Washington, D. C.

PREVENTION *of* TUBERCULOSIS

Conducted under the auspices of The National Association for the Study and Prevention of Tuberculosis.

Cleveland's Work in Tuberculosis Registration

Cleveland has made a number of signal contributions to the anti-tuberculosis campaign in the last five or six years. Some of these are outlined in an article by Dr. R. H. Bishop, Jr., Chief of the Bureau of Tuberculosis of the Department of Health, in the February number of the *Journal of the Outdoor Life.*

Probably the most significant contribution, however, of the Anti-Tuberculosis League has been the gradual shifting of responsibility from the shoulders of the privately supported anti-tuberculosis league to the shoulders of the publicly supported Department of Health, so that now most of the work which was in 1910 supported by the League is carried on directly under municipal auspices.

This has meant the transfer, for example, of such work as the dispensaries, day camps, open-air schools, a large share of the educational work, visiting nurses and other facilities. It has also meant a marked increase in the activity of the city along the lines of control and prevention of tuberculosis. For example, where there was one dispensary in 1910, the city now supports six with paid physicians and with twenty-six visiting nurses and an adequate staff. Where there was one experimental open-air school in 1910, the city now has eight and is rapidly providing for more. Where the sanatorium provision in 1910 consisted of only 89 beds, today the new municipal sanatorium has a capacity for 225 patients, and there is in addition, advanced case provision in another institution for 100 more cases. Much of the credit for this remarkable development work in Cleveland is due to the activity of the Anti-Tuberculosis League.

One of Cleveland's most significant contributions, however, to the anti-tuberculosis campaign has been its endeavor to secure as nearly as possible accurate registration of living cases of tuberculosis. While there are numerous local ordinances and a considerable number of state laws requiring reporting and registration of living cases of this disease, it is a sad commentary upon the efficiency of public health work in American cities that in most instances the registration is largely neglected and in some cities it is practically a farce. There are a few American cities with a population of 50,000 or over where the number of living cases reported annually equals or exceeds even the number of deaths from tuberculosis in a given year. That the Bureau of Tuberculosis of the Cleveland Health Department has been able to secure a registration of practically five living cases to every annual death, is significant of its activity and is in itself a contribution to the anti-tuberculosis movement of unusual value. Dr. Bishop does not pretend that even this remarkable record shows a complete registration. He estimates from his records that they have approximately 85 to 90 percent of all tuberculosis cases registered before death. The accomplishment of Cleveland in this respect is spurring many other cities to renewed activity in this most important and fundamental phase of any well-directed anti-tuberculosis campaign.

Cleveland Municipal Tuberculosis Sanatarium, Warrensville, Ohio.

The Chicago Municipal Tuberculosis Sanitarium

Unique in its original conception and daring in its final execution, the Chicago Municipal Tuberculosis Sanitarium, which is to be opened within the next month, stands today as a model for institutions for the treatment of tuberculosis, particularly those which will be established under the control of large municipalities.

The Chicago Municipal Tuberculosis Sanitarium is the outgrowth of the activity of the Chicago Tuberculosis Institute, which secured the passage of a referendum law in 1908, and the following year by an overwhelming majority received favorable action at a popular election upon the erection and establishment of this institution. The accumulation of the tax provided for by the popular vote has given the various institutions a fund of more than $2,000,000.

To Dr. Theodore B. Sachs, one of the pioneers in the anti-tuberculosis movement in Chicago and the leading spirit upon the board of the new sanitarium, much of the credit for the final completion of the institution must be given. With unselfish and unremitting labor he has worked for years studying plans of institutions in every part of the United States and in Europe in order that the Chicago institution might incorporate the best features for their own tuberculosis sanitarium and might avoid the numerous errors of such hospitals already in existence. That this study has borne fruit is evidenced even to the casual observer who visits the institution or inspects the plans of it.

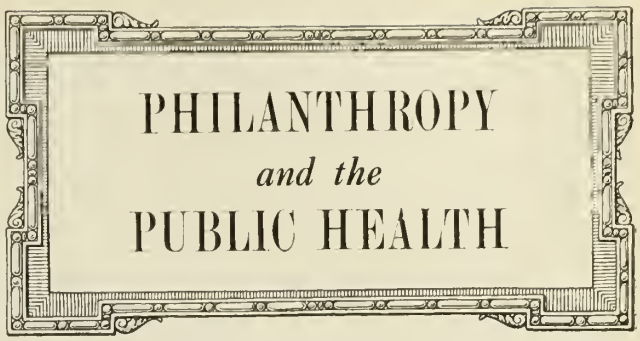
The general plan of the institution, which is erected upon a hundred and sixty acre tract in the northwest section of Chicago, provides for two main divisions, one for the care of advanced cases and one for the care of incipient cases. The infirmary group for advanced cases is erected somewhat on the quadrangle plan, with two long wings and an arm between them, the whole being in the form of a letter "H." This division of the sanatorium will provide for three hundred advanced cases and gives ample opportunity for classification in almost every conceivable way, including single rooms, double rooms, small wards, maternity wards, isolated wards for infectious diseases, and numerous other features. As is the case with the incipient division, the infirmary group has a complete administration building in which are found the quarters of the chief executive and his staff, together with the bacteriological laboratory and research facilities. Sufficient provision is also made for other employees, including nurses and helpers.

Commenting upon the opening of the institution, in the last number of the *Journal of Outdoor Life*, Dr. Sachs says: "In 1905 the entire provision for tuberculous patients in the City of Chicago consisted of about two hundred beds for advanced cases, of which number one hundred and fifty beds were in the Poorhouse. The city was devoid of the least evidence of any organized effort against tuberculosis.

"In 1915 Chicago will have, in all, over two thousand three hundred sanatorium and hospital beds, a comprehensive, well-organized dispensary system and all other auxiliary arrangements essential in the fight against the disease. This places Chicago in the forefront of American cities."

In order to give more privacy to patients who cannot afford private rooms and yet are able to pay a little more than is asked for public ward accommodations, the Hospital for Women of Maryland has provided a group of cosy cubicles, or small curtained apartments, arranged on two parallel sides of a large ward room, with corridor space between the two rows. Each cubicle is 8 x 12 feet in size and receives light through a large window. The plan is designed for the wives of men whose incomes are under $2,000 a year, and the charges are elastic. It is said that in confinement cases it is possible to keep the expense, including the physician's fee, down to $50. Part of the secret of the reduced cost of the cubicle, as compared to the room, lies in the fact that the substitution of a curtain for a wall at that portion opening on the corridor and the grouping of patients closer together than in rooms makes it possible for a nurse to care for more patients.

The International and Great Northern Railway Employees' Hospital Association is the name of a new organization formed at Houston, Tex. The purpose is to provide medical and surgical treatment and hospital care for the employees of the International and Great Northern Railway Company. Eight trustees will manage the association. Four of the trustees are to be officials of the railroad and the other four are to be employees.



The New York Association for Improving the Condition of the Poor.
Bailey B. Burritt, General Director.

Department of Family Welfare, William H. Matthews, Director.
Department of Social Welfare, Donald B. Armstrong, M. D., Director.

The Bereft Family and Widows' Pensions

BY HOLLAND HUDSON

To those families whose training and income permit them to prepare for no further period than the current week, the death of the bread-winner frequently means economic annihilation. The days, weeks, and sometimes months of illness preceding the husband's death often drain the family, not only of their economic reserve, but of their normal physical capital. Destitution and disease are fellow mutes at the poor man's funeral. The exhausted widow, with no training for her responsibility as a bread-winner, is unable to provide proper food, clothing and hygienic living conditions for herself, much less for her children, and another group of public hospital patients is too frequently the sequel to her brave but hopeless attempts.

As deplorable as the physical disaster just described is the ensuing disintegration of the family, that ancient and natural unit of society. It is no reflection on the administration of institutions for dependent children to observe that just as breast-fed babies with healthy mothers have a better opportunity for good physical condition, so the child who is taken care of by an intelligent mother has a better mental and moral opportunity than the inmates of the best institutions.

Any movement aiming to make possible the proper care of dependent children by their own mothers is thus a movement for the health of those children and their posterity, a movement for normally-minded, strong-bodied children instead of the all-too-common mal-nourished and neurotic half-orphans of today.

The earliest experiences of the New York Association for Improving the Condition of the Poor showed the care of the intelligent mother to be essential to the child's best welfare, and this has been the constant policy of the Association from its beginning. Experience with all kinds of relief work has also shown that the mere giving of money in an emergency seldom restores a destitute family to lasting prosperity and self-respect. The same mistakes and weaknesses that caused destitution once cause it again, and with each economic collapse the insidious habit of asking alms further undermines character.

In order to prevent this vicious pauperism it has been found necessary to give, with every dollar spent for relief and rehabilitation, the education necessary to keep every family permanently on its feet, physically, mentally and economically. The modern training toward scientific education has both justified this policy and facilitated its systematic execution. More than an approximate adjustment of income to disbursements is now possible. The

widowed mother now receives expert instruction in buying and cooking. The trained nurse instructs her in the care of the little ones and the treatment of their ailments. The visitor, while in no wise infringing on the province of the clergy, seeks to assist in bringing about a healthy appreciation of the situation which will give the fatherless children neither an atmosphere of stupid and thoughtless waste nor one of cringing pauperism, but sturdy, intelligent self-respect.

The work of these trained helpers is carefully correlated. The following story of a typical case shows how the death of a bread-winner might have increased the community's burden of invalids and dependents by six more, but how, instead, the widow's problems were studied by trained and sympathetic workers, with the results indicated:

Mrs. O. was the widow of a collector who had been earning a very small salary, which came so far short of their standard of living that she was obliged to help out by doing millinery work. She was a woman of fair education and upbringing, not at all a chronic pauper or "down-and-out." At the time of her husband's death she had three little boys and two girls, the oldest boy thirteen years old. For two years she struggled to support herself and her five children by millinery work, but the long watches during her husband's fatal illness had undermined her health to such an extent that she was in no condition to earn any considerable part of what she needed. Her pastor induced her to place her problems in the hands of the New York Association for Improving the Condition of the Poor.

The visitor assigned to this relief problem found Mrs. O. and her five children living in two rooms with a relative. Larger and more healthful quarters were soon found for them. The trained nurse found that the mother had developed badly diseased gums, that the oldest boy was in danger of losing the use of one arm because of an imperfectly knitted fracture, that the twelve-year-old girl had been under treatment at a Department of Health clinic for eighteen months for mal-nutrition without gaining an ounce, and that four of the five children had dangerously obstructed nasal passages. The mother's mouth was treated at the Post-Graduate Hospital. The case record of the mal-nourished child was consulted at the Department of Health clinic and it was found that the doctor had prescribed milk and eggs, which had been, of course, unobtainable. The little girl now has her milk and eggs and is still gaining weight and strength. Three of the children were operated on for nasal growths and have since shown increased aptness in their studies and increased quickness of mind and body. When Mrs. O. and her family were referred to the Association her children were timid, nervous and old beyond their years. After several months of good food and the companionship of a mother no longer driven frantic by the thought of imminent starvation, they have regained the lusty vigor and the merry spirit of normal childhood.

Whether the means of making possible the proper care of dependent children by their mothers be called "widows' pensions" or by another term is unimportant. The New York Association for Improving the Condition of the Poor now seeks to provide a "pension" for all the bereft families in its care whom observations have shown to be eligible. A recent analytical review of the rehabilitation of widows' families by the Association shows that the best results have been accomplished in those cases in which the widow has been allowed sufficient means to devote a normal and constant part of her time to the care of her children. So conclusive is the evidence embodied in this review that the Association has undertaken to pension the other 430 widows with dependent children now in its care. Twenty thousand dollars of the necessary $72,000 addition to the Association's annual relief budget has already been pledged by the Rockefeller Foundation, in the following terms:

"The representatives of the Rockefeller Foundation have been investigating your work of providing pensions for dependent widows with families. As a result of this study the Foundation is prepared to cooperate with you in this work, and hereby pledges a sum not to exceed twenty thousand dollars ($20,000) a year for a period of ten years. . . . We are impressed with the importance of the work of your visitors in ministering to these families, believing that this patient, careful, personal service is even more important than the material relief."

One hundred and six pensions have been granted since December 19, 1912. Of these, 8 have been discontinued, 4 by reason of the mother's remarriage, 3 because increase in age and earning ability of the children made the family self-supporting, and 1 because of conclusive evidence of immorality. The results in every other case have been so gratifying as to raise no question about the continuation of the advances made.

MONTHLY BUDGET OF THE O. FAMILY

Actual Income		Adequate Income	
Woman earns	$15.00	Rent	$16.00
Lodger		Food	30.30
Church		Fuel and light	3.25
Relatives	2.00	Clothing	12.00
Other societies	15.00	Insurance	2.00
		Sundries	2.00
Total	$32.00		
A. I. C. P.	33.55		$65.55
	$65.55		

Mr. Polhemus Lyon, chairman of the Cape Town (South Africa) hospital board, writes an interesting letter to THE MODERN HOSPITAL. Under the control of the Cape board there are five hospitals, a free dispensary and a convalescent home. Thirty thousand out-patients and 3,500 in-patients are cared for annually, and much the larger proportion entirely free. Twenty-five percent of the income is donated by private citizens. Mr. Lyon regards with much favor a hospital ordinance which went into effect at the Cape two years ago and which is similar to a law in force in New Zealand. Under this ordinance the provincial government appoints six members of the thirty-six composing the hospital board, but the hospitals receive from the government $7.20 for every $4.80 subscribed by citizens, an equal sum for every $4.80 appropriated by municipalities, $4.80 for every $4.80 collected from patients, and $4.80 for every $4.80 received from bequests up to a maximum of $2,500. This plan enables the board to get through practically without any deficit. Every year the government grants not less than $50,000 for extension work, more particularly buildings and equipment, and on this sum the board pays interest at the rate of 2½ percent per annum for 40 years, which settles their obligation. Mr. Lyon is a member of the American Hospital Association and subscribes to THE MODERN HOSPITAL.

An organization of women to be known as the Twilight Sleep Association has been formed in New York City for the purpose of supplying information to prospective mothers regarding the Freiburg method. Plans are under way for an extended lecture tour of the country. Ultimately the association hopes to build a large maternity hospital, where the best method, either twilight sleep or its successor, will be employed. Miss Mary Ware Dennett, Mrs. Temple Emmett, Mrs. Cecil Stewart and Miss Mary Shaw were among those whose names were associated with the undertaking.

PREVENTION of BLINDNESS

MATERNITY

Conducted by Carolyn Conant Van Blarcom, R. N., Secretary National Committee for the Prevention of Blindness; Chairman Committee on Infant Welfare, National Organization for Public Health Nursing.

Babies' Sore Eyes

Someone has aptly said that the watchword of a scientific age is "Prevention." Accordingly, we hear on every hand of efforts being made to prevent crime, immorality, various kinds of waste, pain, premature death, etc., these efforts being crowned with no inconsiderable measure of success. The wonder is then that blindness, which is, perhaps, of all infirmities, the one most dreaded and deplored —certainly one of which the spectacle invariably inspires sympathy and compassion—should have been allowed to have the number of its victims swelled year by year, with no hand raised to save them until a comparatively recent date.

It is asserted that forty percent, or nearly one-half, of the blindness of the world is preventable.

And this in an age the watchword of which is Prevention!

The causes of preventable blindness are numerous and varied, among them being: Industrial accidents; accidents at play; Fourth of July celebrations; sequelæ of some of the infectious diseases; wood alcohol; sympathetic inflammations; syphilis, hereditary and acquired; trachoma and other infections; progressive nearsightedness; eyestrain of various kinds, particularly among school children; and ophthalmia neonatorum.

Of all these, ophthalmia neonatorum is the most prolific cause of unnecessary blindness, about twenty-five percent of the pupils enrolled in schools for the blind throughout the country being victims of this disease.

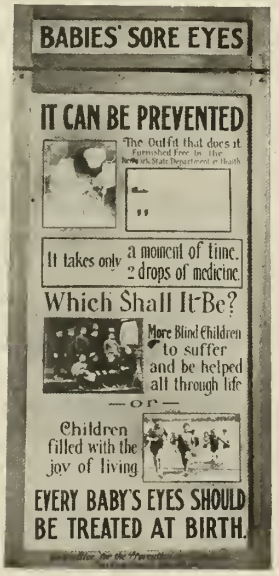
There seems to be fairly definite agreement that we would practically have no blindness from ophthalmia neonatorum if all babies' eyes were first bathed, and then treated with some derivative of the silver salts, and if, in addition to this, all babies' eyes were watched and were given skillful medical treatment immediately upon the appearance of symptoms of ophthalmia.

We know that ophthalmia neonatorum is not really very common—there is about one case in every two hundred births—and that the cases of blindness from this cause are still less frequent; but each case is so pathetic and is so nearly always the result of sheer carelessness and neglect that even the small number occurring annually throughout the country is a reproach to society.

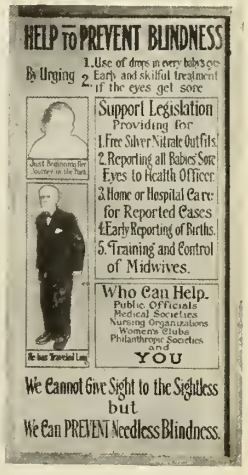
It is increasingly apparent that as in the effort to stamp out tuberculosis, if babies are to be saved from unnecessary blindness, certain legal provisions are necessary. But the foundation upon which the movement must inevitably rest is widespread publicity. And "widespread" we mean, for every member of the public must realize that it is dangerous to neglect the eyes of babies at birth, that it is even more dangerous to neglect redness and swelling and discharge of the eyes during the first three or four weeks of life. And the public must also know that the beliefs that "babies' sore eyes are caused by cold," etc., or that "it is natural for babies to have sore eyes," are fallacious. The medical facts must be popularized and so simplified that there can be no misunderstanding.

NEEDLESSLY BLIND FOR LIFE
Because her eyes were neglected during infancy
Her Mother thought it was natural for Babies to have Sore Eyes so nothing was done.
The State Spends $10,000 Annually for the Needlessly Blind.
There are 10,000 Victims of Babies' Sore Eyes in This Country

"BABIES' SORE EYES" A DANGEROUS DISEASE
"A Few Days Old" "Three Days Later."
EYES Red Swollen Discharging
BLIND
Caused by Germs
getting into the Baby's Eyes at or soon after birth
Not by Light or Cold.
Gonococcus Streptococcus Pneumococcus
Some of the Germs that make Babies Eyes Sore
It often ends in Blindness if neglected.
This Disease is Preventable and If taken in time Curable.


BABIES' SORE EYES
IT CAN BE PREVENTED
The Outfit that does it Furnished Free by the
It takes only a moment of time, 2 drops of medicine
Which Shall It Be?
More Blind Children to suffer and be helped all through life
—OR—
Children filled with the joy of living
EVERY BABY'S EYES SHOULD BE TREATED AT BIRTH.

DON'T USE HOME REMEDIES
If the babies eyes get red swollen and matterey even after the drops have been used.
Get a Doctor at Once
or
Take the Baby to an Eye Clinic
Better for a Visiting Nurse in the Home
or
A Few Days in a Hospital, than
Long Years in an Institution for the Blind
Proper Care in Time may Prevent Lifelong Blindness.


HELP TO PREVENT BLINDNESS
By Urging
1. Use of drops in every baby's eyes
2. Early and skilful treatment if the eyes get sore
Support Legislation Providing for
1. Free Silver Nitrate Outfits
2. Reporting all Babies' Sore Eyes to Health Officer
3. Home or Hospital Care for Reported Cases
4. Early Reporting of Births.
5. Training and Control of Midwives.
Who Can Help.
Public Officials
Medical Societies
Nursing Organizations
Women's Clubs
Philanthropic Societies
and
YOU
We Cannot Give Sight to the Sightless but
We Can PREVENT Needless Blindness.

The causes of preventable blindness are numerous and varied, among them being: Industrial accidents; accidents at play; Fourth of July celebrations; sequelæ of some of the infectious diseases; wood alcohol; sympathetic inflammations; syphilis, hereditary and acquired; trachoma and other infections; progressive nearsightedness; eyestrain of various kinds, particularly among school children; and ophthalmia neonatorum.

Of all these, ophthalmia neonatorum is the most prolific cause of unnecessary blindness, about twenty-five percent

The accompanying exhibit, consisting of a five-panel screen, which presents the problem of infant blindness and its prevention, has been found valuable in the educational campaign which is being carried on. It is attempted by means of this exhibit to outline a legislative campaign and to drive home the facts that babies may go blind if they are neglected; that babies' "sore eyes" is a dangerous disease, and one which may occur in any family; that it can be prevented; that it is dangerous to temporize by using home remedies; and to impress upon every individual his or her responsibility in helping to save infant citizens from unnecessary and lifelong blindness.

The hospital at Junction City, Kan., is to be remodeled and enlarged.

Need of Organized Effort for Better Supervision of Pregnancy and the Puerperium

The real necessity and importance of instructing the lay public in the field of preventive medicine has been thoroughly demonstrated during the past few years. In the efforts of the medical profession, health boards, hospitals, and philanthropic organizations to reduce infant mortality, proper attention is now given to the education of mothers in general and an antenatal hygiene. Why not go a step farther and instruct them in the real necessity of expert care before, during and after confinement?

The public, and, unfortunately, a great number of the medical profession, have too long looked upon childbearing as simply a physiological process needing no special care in what is termed normal cases. After centuries of vaunted civilization, the normal case, in the strict sense of the word, has become the exception and there is no case that should not have expert supervision during pregnancy, labor and the puerperium. The apathy and neglect of the medical profession in treating this function, "the most important in woman's life," and on which hangs the fate of nations, is culpable, in spite of the poor fees and the drudgery entailed in this class of practice.

According to the last United States mortality census eighty percent of the deaths of babies under one month was due to premature birth, congenital debility, injuries at birth, malformations and convulsions. Someone has grievously failed in necessary precautions, protection and care. American obstetricians are conceded to be the most skilled and progressive in the world. Our medical schools give not only thorough courses in the physiology of reproduction, but some practical experience to students in delivery and after care. It would be absurd to put all the blame on the profession.

In the year from October 1, 1912, to September 30, 1913, the number of births in the Borough of Manhattan was 65,085, of which 40,701 were reported to the health department by physicians and 24,384 by midwives. It is estimated that midwives attend fifty percent of the births in the United States. This class are undoubtedly the worst offenders and constitute a grave problem that has long demanded solution. Because of inadequate statistics, no one knows how many midwives are practicing in America. The old world provides comparatively adequate instruction, regulation and supervision; we have either no laws or such as have proven ineffective and inadequate to control the midwife. She defies the physician and all in authority as she defied Pharaoh more than three thousand years ago. It is futile to hope for a speedy abolition of this deep-rooted system. The public must be brought to realize that healthy mothers are the greatest asset a nation can possess and that they must not continue to subject them to unnecessary risks in "their most essential function of childbearing." Let it become generally known that bad obstetrics not only is one of the main factors in increasing infant mortality, but has filled our institutions for the blind and causes seventy-five percent of the gynecological troubles that are making nervous wrecks of our women.

New York City was the first in the United States to establish a school for midwives. This was organized in 1911, at Bellevue, and although conducted on a small scale, with its immense out-patient material, it has already demonstrated to the community that this step goes far to ameliorate our present disgraceful midwife system. The course of instruction covers six months and is eminently practical in its nature. The pupils are taught, largely by demonstrations, elementary anatomy of the female generative organs and pelvis, including pelvimetry, and the theory of obstetrics. The extreme danger of infection from vaginal examination is impressed upon the pupils and they are given at least an inkling of the possibilities of auscultation and palpation in determining presentation, etc. Prenatal care of the mother and her surroundings, care of the eyes and cord of the baby, nursing care of mother and infant, and the importance of breast feeding are emphasized. The entire care of the house and equipment is required of the future midwives and they thus acquire training in cleanliness, cookery, sanitation and hygiene. Statistics at the school prove conclusively that the graduates summon the aid of obstetricians in a far greater percentage of cases than does the old type of midwife. This should be gratifying to the physician who fears that trained midwives will encroach on his obstetrical field. The men responsible for the establishment of the Bellevue School of Midwives are not deluded into thinking that such schools will result in an ultimate solution of this problem, however, and they deserve the cooperation and support of the community for their laudable efforts toward the amelioration of conditions.

The Society of the Lying-in Hospital of the City of New York is doing excellent work not only in giving to thousands of poor women the advantages of modern obstetrical care, but in the training of medical men by skilled obstetricians. Last year the society reported 2,725 confinements in tenements and 2,745 in the hospital, conducted by physicians under the supervision of the attending obstetrical surgeons. The time must come when the public will insist on a specialist in obstetrics as they now do in other branches of medicine. Lying-in hospitals, in many respects ideal for confinements, can never, because of their enormous expense to the community, become sufficiently numerous to solve this problem. The problem of economy and lack of space necessarily shortens the duration of the lying-in period and many patients are discharged before the upright posture should be permitted. The resumption of household duties before the uterus has receded from the anterior wall of the abdomen and returned to the pelvic cavity often results in misplacements, etc., that bring on nervous conditions frequently bordering on insanity. It is impossible to fix any period for the duration of this process of involution, and while one patient might tentatively sit up on the ninth day another should carefully avoid it for weeks.

Some of our health departments have already a "Division of Child Hygiene." The director of this division may be an obstetrician capable of coordinating prenatal work already done by hospitals, dispensaries and social service nurses, and of establishing supervision before, during and after confinement.

The work done in several of our cities during the past five years, for expectant mothers, continues and will inevitably turn public attention to this problem, too long either inadequately dealt with or neglected. Enlightenment of the laity on the dangers of bad obstetrics will be the entering wedge for the ultimate solution of the midwife problem. In the meantime our medical schools should be more insistent with students on non-interference and the necessity of post-graduate work if they wish to do good obstetrics; we should have more schools for midwives and better laws for their regulation and control.

Bequests in the sum of $200,000 were recently paid to New York City hospitals by the executors of the B. Altman estate, as follows: $100,000 to Mount Sinai Hospital, $25,000 to St. Luke's Hospital, $25,000 to the German Hospital and Dispensary, $25,000 to the New York Eye and Ear Infirmary, and $25,000 to the Lincoln Hospital and Home.

DEPARTMENT of LIFE EXTENSION

Some Problems in Life Lengthening

BY EUGENE LYMAN FISK, M. D.

Director of Hygiene, Life Extension Institute, Incorporated, 25 West 45th street, New York, N. Y.

Many people take it for granted that our advancing civilization is accompanied by a progressive improvement in national vitality. To those unversed in the study of mortality statistics, the movement of the general mortality is accepted as a barometer of such conditions. As everyone knows, the general death rate has been steadily falling for a number of decades. In the United States registration area the death rate has fallen from 19.8 per one thousand living in 1880 to 14.1 in 1913. The situation, to the casual observer, seems entirely satisfactory, and does not apparently call for any heroic measures so long as we fight tuberculosis and other communicable diseases.

This fall in the general death rate is a world phenomenon. It has been going on for a century or more throughout all civilized lands. In certain countries the registration of births and deaths was fairly accurate even in the 18th century, and we are able to ascertain from their records that in such communities the growth of knowledge and improvement in social conditions have been accompanied by a gain in vitality, which is chiefly manifested in the earlier ages of life.

For example, the following table will show what has taken place in the City of Geneva since the year 1551, where the death rate has been more than cut in half during that period:

1551-1600	39.7	1751-1800	29.5
1601-1650	37.0	1806-1812	27.0
1651-1700	35.9	1851-1890	24.8
1701-1750	33.5	1891-1900	17.6

In the City of Berlin since 1721-30, the death rate has been reduced from 40.6 to 15.5, a reduction of more than 50 percent.

In London the death rate has been reduced since 1880 from 29 per thousand to 14.

In Paris the death rate during the same period was reduced from 30.5 to 17.5.

In Sweden the death rate in 1751-60 was 27.4, and in 1912 it was 14.2. The Swedish records show that this fall in the death rate has been due to a gain in vitality during the early years of life, yet there is a substantial reduction at every age period. For example, during the period 1751-60 the death rate under five years of age was 83.9 per thousand. In 1891-1900 it was 36.9, a reduction of 57 percent. This saving in mortality continues during every age period of life, but to a lesser degree after 45 years of age. This same trend is noted in other European countries.

In the United States we note important differences. An analysis of the available statistics shows that the fall in our general death rate is *wholly due* to a reduction in the death rate among the age groups below 45 to 55. In the late periods of life we have lost ground, and our records show an increasing mortality, notwithstanding the fact that the proportion of those living over age 45 is less in the United States than in European countries.

How misleading the general death rate may be as a guide in such matters is shown by the records of New York City. In 1885 to 1910 the general death rate of New York City fell from 27.5 to 17. But the following comparative table shows that the gain has been wholly due to the saving of lives under forty, a decreased expectation of life being shown at this age and beyond, as compared to thirty years ago. The exact age where the loss begins for this country at large cannot be determined, but statistics of the registration area, separate cities and separate states and cities, indicate that it lies in the age period between forty-five and fifty-five and continues beyond.

APPROXIMATE LIFE TABLES FOR THE CITY OF NEW YORK BASED ON MORTALITY RETURNS FOR THE TRIENNIA 1879 TO 1881 AND 1909 TO 1911

	1879–1881			1909–1911		
Age	Males	Females	Persons	Males	Females	Persons
–5	39.7	42.8	41.3	50.1	53.8	51.9
5	44.9	47.7	46.3	49.4	52.9	51.1
10	42.4	45.3	43.8	45.2	48.7	46.9
15	38.2	41.2	39.7	40.8	44.2	42.5
20	34.4	37.3	35.8	36.6	40.0	38.3
25	31.2	34.0	32.6	32.7	36.0	34.3
30	28.2	31.0	29.6	28.9	32.1	30.5
35	25.3	28.1	26.7	25.4	28.4	26.9
40	22.5	25.2	23.9	22.1	24.7	23.4
45	19.8	22.4	21.1	18.9	21.1	20.0
50	17.2	19.4	18.3	15.9	17.7	16.8
55	14.5	16.4	15.4	13.2	14.6	13.9
60	12.2	13.8	13.0	10.8	11.8	11.3
65	9.9	11.2	10.5	8.8	9.4	9.1
70	8.5	9.3	8.9	6.9	7.5	7.2
75	7.1	7.5	7.3	5.3	5.7	5.5
80	6.2	6.5	6.4	4.1	4.5	4.3
85	5.4	5.5	5.5	2.0	2.4	2.2

The possible causes of this unfavorable trend in mortality in the United States require further study. The admixture of foreign blood has been advanced as a possible explanation, but there is as yet no sufficient proof to support this hypothesis.

It is reasonable to assume that the extraordinary industrial development in this country, and the rapid increase in the population, have resulted in a lack of adjustment. In the older civilizations, life moves more in grooves, and it is probable that, in Germany at least, more thought is given to vocational training and adaptation of the individual to his environment.

In Norway, where a very low death rate prevails, life is singularly free from nervous tension, noise and unrest.

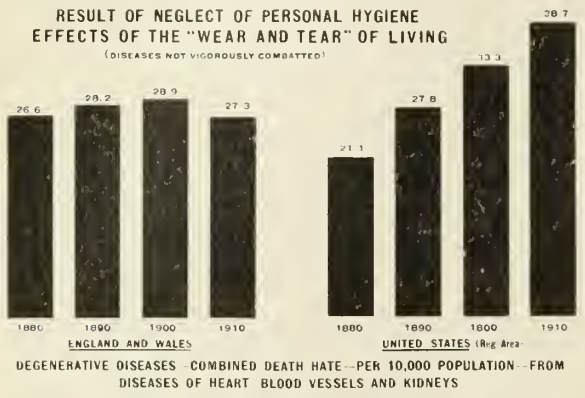
Overeating and a reduced amount of exercise incident to changed working habits, and increased luxury of living have been advanced as reasons for our increasing mortality in the later ages.

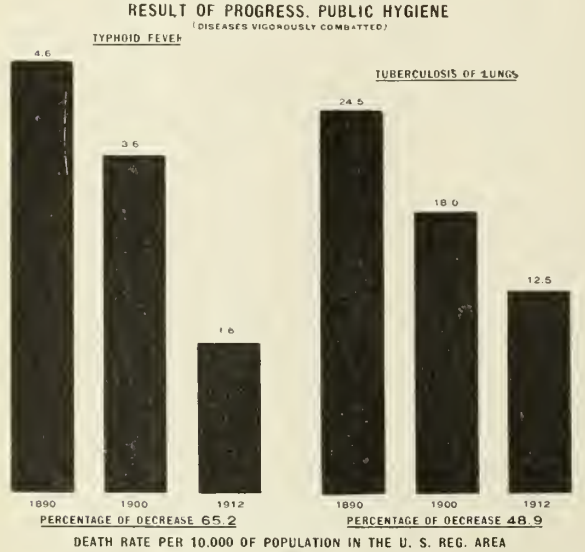
In the past thirty years the per capita consumption of alcohol, especially of malt beverages, has increased in this country very markedly, but it is still below that of England and Germany. This increase, however, as well as an increase in the use of tobacco, reflects a more luxurious habit of living, and is no doubt accompanied by overeating and other excesses. In England and Germany the per capita consumption of alcohol has distinctly fallen during the past thirty years.

In studying British statistics, we note that the mortality from diseases of the heart, blood vessels and kidneys has shown a downward trend in that country during the

past several decades, while in the United States registration area the death rate per 10,000 living from these affections of middle life and old age has increased 39 percent since 1890, confirming the available statistics showing an increase in the mortality during the later age periods.

No one can question that this is a problem exceeding in importance the tuberculosis problem. The needless loss of so many lives during the useful age periods would in itself be a serious matter, but the unfavorable trend of mortality in these age groups, if it continues, bodes ill for our civilization.





In advance of ascertaining any single cause for this trend, if there be one, we may at least wage a vigorous campaign for the study and practice of personal hygiene. Apart from some possible unfavorable racial strain or biologic cause, these degenerative maladies of the heart, blood vessels and kidneys must necessarily be caused by errors in living habits—eating, drinking, smoking, sleeping, working, playing, etc.

As a general formula, temperate living all along the line is the indication for self-protection.

Such modification of diet, work, play, exercise, sleep, etc., as may be needed in each particular case, can only be satisfactorily determined by periodic physical examinations, which should commence in infancy and should be given at least once a year throughout life.

It not infrequently happens that well-meaning people sustain injury by trying to follow the good example of their neighbors, without knowing whether or not what is good for their neighbor is good for them. Hence the need for this periodic physical stock-taking, in order properly to adjust the business of living. There are certain broad general principles that underlie healthful living, but even these principles often have to be modified to suit individual cases.

In every hospital and in every physician's practice the study of the causation of these degenerative maladies should be earnestly carried on.

The examinations thus far made by the Life Extension Institute show the encroachment of these maladies into the early years of life. Every effort should be made, by periodic tests of the circulation and kidneys, to detect the early signs of such troubles, when corrective measures can be successfully applied.

Nursing is one of the noblest professions, and is rapidly becoming recognized as one of the most important. . . . The nurse should be a student of human nature as well as of human ailments. . . . Keep reading, reading, reading. . . . Please don't let agriculturists and others who are traveling about the country discourage you in the study of the classics. When I was a farm boy I purchased a Latin grammar jointly with a neighbor boy, and I studied Latin and Greek when I was in college. I want to stand here and pay tribute to the value I gain from the classics in English and the sciences. You must know Latin if you are ever to read the original of materia medica, and to gain much of the most important information concerning your work. Don't disregard progress. It is not too late for you to begin to study Latin. . . . If you will only go out into the world and make it a little happier and make yourself a little better man or a little better woman, as the result of something I have said, I have fulfilled my purpose.—Governor Woodbridge, North Ferris, Mich.

The St. John Ambulance, the only Red Cross Society in India, has taken up with greatest promptitude its duties in the present European crisis. During the past five years the society built up the position of a national institution in India and has established in so brief a period no less than three hundred centers in the Indian Empire. In addition to hospitals in the theater of war there will be hospital ships plying between Bombay and Europe as well as ambulance trains in India, which will require comforts on a special scale. The association will also be required probably to provide comforts for rest camps and rest stations on the railways. In addition to the ordinary units the Indian branch of the association has designed what is called the Red Cross bag for invalided British and Indian soldiers upon leaving the hospital.

Dr. Emma Martin, formerly of Otterbein, Ind., but for the last thirteen years in China as a medical missionary of the Methodist church, is just returning to Pekin from an extended furlough in this country, where she has been studying advanced practices in surgery at the Rush Medical College, Chicago, and the Mayo Hospital at Rochester, Minn. According to Dr. Martin, one of the peculiar operations that falls to the lot of the missionary surgeon in China is that of amputating the feet of Chinese children to save their lives from blood poisoning, caused by bandaging the feet to keep them small. Chinese patients, Dr. Martin says, do not require spring mattresses or soft cushions, as they prefer to lie on a hard pallet with a brick or block of wood for a pillow. On her arrival in Pekin Dr. Martin will take charge of a newly erected hospital of the Methodist Missionary Society.

Physicians at Gary, Ind., and other points in Lake County are working for the establishment of a county tuberculosis sanatorium. The buildings proposed would cost about $125,000.

DISPENSARY *and* OUT-PATIENT WORK

Introductory Note

The Department of Dispensary and Out-patient Work aims to make itself useful to the readers of THE MODERN HOSPITAL who are interested in dispensaries. This means physicians, superintendents, nurses, workers in social service, and trustees of dispensaries or of hospitals having out-patient departments, and of the many hospitals that are now considering the establishment of out-patient departments as supplements to the work of their wards.

It will be the aim of the department to present notes on current developments in dispensary work, and new features of the work of any dispensary or out-patient department that are of general interest; and to include from time to time such special articles as may be timely and important. A "Question Box" will be maintained, and readers of THE MODERN HOSPITAL are invited to send questions concerning any phase of dispensary work or administration. The best available experts will be secured to answer the questions, and if questions and answers are of general interest, they will be printed in these columns.

Readers are invited to send any news matter relating to any dispensary or out-patient department with which they are concerned, and which they think would interest the readers of THE MODERN HOSPITAL. All communications, including questions for the "Question Box," should be addressed to the Editor of the Dispensary Department, office of THE MODERN HOSPITAL, Tower Building, Chicago.

It Feeds the Wards

It Follows-up discharged Patients

(Preventing recurrence of disease and promoting Hospital Efficiency)

It Forestalls Serious Disease by treating it in early stages

(Promoting Economy of Hospital Service)

Self-Supporting Dispensary Clinics

At the Forty-second Annual Session of the National Conference of Charities and Corrections, to be held at Baltimore May 12-19, 1915, a section will be reserved for the discussion of "Pay Clinics for Persons of Moderate Means." This is a new field in dispensary work which, as yet, few institutions have entered.

The need of better provision for medical care of self-supporting families of small means has been felt by many laymen and, more and more, doctors are expressing their belief in such a plan. In an address by Dr. E. P. Lyon, Dean of the Medical School of the University of Minnesota, before the graduating class of the St. Louis University School of Medicine, June 21, 1914, the speaker said: "Cooperation among doctors themselves is necessary if we are to secure the best results in the care of the individual patient. Of course the consultation is a long-established attempt at such cooperation; but that its usefulness is very limited, as ordinarily carried on, there can be no doubt. Whatever good there may be in consultation (except in hospitals), has accrued almost exclusively to the wealthy patient. Surely medicine will never be rightly adjusted in the social order until every man, woman and child is entitled to receive and actually does receive the best oversight and treatment that science is able to afford.

"There are various reasons for this condition. One of the most potent is the ever-widening specialism in medicine. Of the inevitable necessity of this movement there can be no doubt. No one can hope to compass the tremendous volume of medical fact or become proficient in all the valuable diagnostic, therapeutic and operative procedures. Specialism in any line of endeavor, whether medical or otherwise, tends to narrow the field of activity and of vision. Concentration increases intensity at the expense of distribution. It acts in human activity exactly as in the electrical transformer; if you increase the voltage, you decrease the amperage. The practical point is that for certain patients the work of several experts is necessary if the best results are to be obtained. How well has medical practice succeeded in adjusting itself to secure these benefits for the individual case? In my judgment it has not succeeded. It is true that in the best charity hospitals the very poor individual receives the services of all the necessary specialists and all the modern appliances. For the small group who can pay large fees there is possibility of getting what is needed by reference from specialist to specialist and the paying of separate fees for each element of service. The doctors may think that this procedure works well. In my opinion it does not work well, even for the doctors, taking their interests broadly; and from the patient's point of view it is subject to the criticism that they interpret the multiplicity of fees as repeated payments for a single service. They look on specialism as a new device for padding their pocketbooks. But the fatal fallacy of the present arrangement is its inapplicability to the great class of independent poor, who cannot by any possibility meet the repeated demands for even moderate fees. They simply go without the service; and, of course, the doctors cannot render it."

The Growth of Dispensaries

The establishment of a department of dispensary work in THE MODERN HOSPITAL is a recognition of the remarkable increase in dispensary work in the United States in recent years. The accompanying chart, which pictures this development graphically, understates rather than overstates the truth.

More Money for Dispensary Work

A notable address was made by Dr. S. S. Goldwater, the well-known superintendent of Mt. Sinai Hospital, New York City, and now Commissioner of the Department of Health of New York City, on January 21, 1915, before the annual meeting of the Hospital Saturday and Sunday Association of New York. This Association, by the way, has been established for several years as a cooperative body of many of the leading hospitals of New York City for the joint raising of funds by collections in churches and synagogues and by solicitation from the general public. The funds have been distributed among the hospitals, at first in proportion to the number of days of free-bed care given during the preceding year, but recently certain minimum standards of hospital work have been insisted upon as a condition of the receipt of funds.

The portion of Dr. Goldwater's address which is of interest to all who have faced the difficult problem of securing funds for improving dispensary work is as follows:

"I have said that there was a particular piece of work that I wished to urge upon the Hospital Saturday and Sunday Association to which heretofore no attention has been paid by you; I refer to dispensary work.

"Heretofore money has been given by you to hospitals in proportion to the amount of free work done for in-patients. No attention has been given to out-patients. If you compare the in-patient work of the hospitals with their out-patient work, you will find that the in-patient work is done today in a much more satisfactory manner than is the out-patient work. I think that anybody who compares the two must realize that it is the out-patient work that especially needs support and development, rather than the in-patient work, if one has to choose the one or the other. Some three years ago, realizing the need for the development of out-patient work in this city, there was formed the Associated Out-Patient Clinics. This Association has been making some very interesting studies.

"At the end of this year, approximately, the Associated Out-Patient Clinics will exhaust the fund given to it by the New York Foundation for purposes of investigation and of preliminary organization. There will have been gathered by that time a fund of knowledge in regard to dispensary work which will be tremendously valuable if applied, but which will have no value if not applied. How can it be applied?

"Those who have been working in the Associated Out-Patient Clinics realize that in order to carry home to the various dispensaries the lessons of its studies, it is indispensable that those who are endeavoring to teach these things and to bring about the adoption of higher standards of efficiency in medical work and in business management, shall have the sort of control that goes with the power to give money. You are distributing today something over a hundred thousand dollars among the hospitals of the city. The hospitals welcome your gifts and profit by them. But I doubt whether you succeed in influencing the policies of the various institutions to any great extent by these comparatively small sums—small, when you compare the sum given to any one institution with the total expenditure of that institution.

"On the other hand, if you will take a hundred thousand dollars—or even half of that sum, and will distribute it among the dispensaries of the city, with the proviso that any dispensary receiving aid shall conform to the right standards, you will be doing a work of great value to the city, and will speedily bring about a radical change for the better in the work of many local dispensaries.

"In the course of its investigations the Associated Out-Patient Clinics has learned, let us say, that clinical work of a particular kind can only be done effectually, that treatment can only be given adequately, if there is supplied a certain equipment; a microscope, for example, for diagnostic purposes. Dispensaries are not equipped with the laboratory facilities they should have. Such facilities are not very costly. They could easily be supplied with such sums as this Association might distribute for that purpose, and the gifts would be felt in this field, because the total amount of money available for dispensary support today is very small, compared with the total amount spent for sick relief of all sorts. Three million consultations are held annually in the out-patient departments of this city. The cost is, perhaps, twenty cents for each consultation, or six hundred thousand dollars for the total work. Approximately half of that is derived from the small payments made by the patients themselves, so that probably the net expenditure of all the out-patient departments and dispensaries of the city today for carrying on work, which amounts to more than three million consultations per annum, is only about three hundred thousand dollars. It is a very small sum when you consider the tremendous extent of this work, which in some ways is more important than the in-patient work of the hospitals themselves.

"Now, with fifty or one hundred thousand dollars in hand, and with a clear conception of what dispensary work should be, you should have no difficulty in persuading dispensaries to change their methods for the better. Many dispensaries today are doing wretched work, which in the end unquestionably brings upon the hospitals the cost of maintaining in-patients who should never have become in-patients. So that if you feel that your interest is in in-patients and not in out-patients, then for the sake of the in-patient service—in order that it may be reduced to the smallest possible proportions—you should make an effort to help the dispensaries and thus to keep out of the hospitals people who would not go there if the dispensaries were properly managed.

"I wish to make a strong appeal to this Association to interest itself in this particular phase of hospital work, upon which the welfare of the hospitals themselves depends to so very great an extent.

"In almost all of the hospitals of the city social welfare work has been begun and has been developed in connection with the in-patient service. But comparatively few of the dispensaries are doing social work adequate to their needs and opportunities. They do not know the conditions that lie behind the diseases they are attempting to treat; they have no facilities for adequate examination; they have no salaries to pay to their staffs; their work is done in a hurried and slipshod manner; diagnoses are often wrong.

"It is because this work is so enormous in bulk and of such overwhelming importance that I appeal to you to interest yourselves in it and to do what you can through the wise use of your funds, to raise dispensary standards, to endeavor to bring about dispensary coordination, to urge upon dispensaries and out-patient departments the adoption of proper minimum standards for work in all of their departments."

The United States Army sanatorium at Fort Bayard, N. M., is to have its capacity greatly increased as a result of the decision of the war and navy departments at Washington to consolidate the several government sanatoriums for tubercular army and navy men into a single institution. Fort Bayard has been decided upon as the logical place from a climatic standpoint for such a sanatorium, and the million-dollar plant there will be enlarged to accommodate the additional patients who will be transferred to that place as soon as accommodations can be provided for them. This decision on the part of the government is understood to mean the abandonment of the naval sanatorium at Fort Lyons, Colo., and the naval and marine hospital at Fort Stanton. Each of these institutions is now caring for about 300 men.

A trust fund for the establishment of a hospital in connection with Washington University, St. Louis, is created by the will of the late Mrs. Eliza McMillan. The hospital is to be known as the McMillan Eye, Ear, Nose and Throat Hospital. The bequest is contingent, however, on the condition that Mrs. McMillan's son, William Northrop McMillan, has no children. The son is 45 years of age and has been married for many years. Mrs. McMillan was the wife of the former president of the American Car and Foundry Company, who died in 1901.

It was recently announced that the building now occupied by Mercy Hospital (for negroes), Seventeenth and Fitzwater streets, Philadelphia, would be sold and a larger and more modern building erected on the east side of Twenty-second street, below Reed. All who wish to help the institution have been asked to pledge ten cents a day for thirty days, with a view to raising $10,000 to apply on the cost of the new building.

SOCIAL HYGIENE

VENEREAL DISEASES

Conducted by William F. Snow, M. D.,
General Secretary, The American Social Hygiene Association, 105 West Fortieth street, New York City.

Placing Venereal Diseases on a Preventive-Medicine Basis

Venereal diseases are generally recognized to be dangerous communicable diseases, and enough is known of their etiology, treatment and prophylaxis to make their suppression and gradual eradication theoretically possible if this knowledge is properly applied. Furthermore, these diseases are ranked with tuberculosis in prevalence and seriousness as a national menace to all races, ages and social groups of people. Yet few boards of health even mention them in their statistical and administrative records, and still fewer departments of health or hospitals make any serious effort to combat them. Probably the reason why no serious national effort has hitherto been made to attack this preventive-medicine problem is to be found in the complex involvement of these diseases with the sex relations of men and women, and in the public's complete lack of general information upon the transmission and dangers of venereal infection.

Almost within the present century has come the realization by the American public that prevention of many diseases through community effort is practical and desirable. The brilliant campaigns against yellow fever and malaria, as insect-born diseases; the inspiring campaign now progressing against hookworm, as a soil-born disease; the steadily growing campaign against typhoid fever, primarily as a water and food-born disease; the slow but tangible advances of the campaign against tuberculosis, as a contact-born disease—all have contributed to the awakening of public opinion in support of efficient health departments, hospitals, and social agencies, directing their efforts toward the suppression or eradication of preventable diseases. This has extended beyond the field of recognized infectious diseases to such problems as the control of cancer and the promotion of mental hygiene.

With the growing realization of the people that venereal diseases are essentially contact-diseases so closely limited to immediate contact, and so largely spread through the contact involved in sex relations that they might reasonably be called "sex-born" diseases, there has come an understanding that this battle must be organized, not against the mosquito, nor the soil, nor foods, nor housing primarily, but against the sex relations and other intimate associations of the venereally sick, with the well. It is just these forms of contact which from biological necessity and from ancestral custom are most vitally interwoven with all that is beautiful and sacred in love, marriage and the birth of children. The public has grasped this idea and in characteristic fashion has begun to make experiments in meeting the situation. Many of these experiments have been superficial, some unwise and a few distinctly harmful, but the preventive-medicine problem is fairly before the people, and those who can help have a duty to perform in wisely guiding them toward a solution. This responsibility falls especially on the medical, nursing, educational and religious professions.

It was to be expected that the social hygiene movement would pass through a stage of "being discovered" and exploited, and there is cause for congratulation that this stage has nearly passed. Within the last two years important advances have been made in placing the movement on a sound basis.

In America the American Social Hygiene Association has been organized as a national clearing-house and its activities outlined on a comprehensive plan. A number of state and city health departments, notably in New York, have instituted important administrative measures in this field. The Boston Dispensary and several other institutions have established social service work with venereal disease cases. In the educational field unwise methods have been largely abandoned and conservative work is being quietly developed in the universities and normal schools. Parents are being impressed with their responsibility in the matter. Legislative and administrative advances have been made in the suppression of prostitution. The American Public Health Association has appointed a committee to study and report upon the problem, and the Association for Improving the Condition of the Poor, in cooperation with other agencies, is making a comprehensive survey of New York clinic and hospital facilities for venereal diseases. In England a Royal Commission on Venereal Diseases has issued its first interim report. Elsewhere in Europe most encouraging work has been in progress.

The appointment in 1913 of a committee of the American Hospital Association in accordance with the following motion promises valuable aid to the social hygiene movement:

"Resolved, that a committee of five be appointed by the president to study the character, cost, and value of direct and indirect work for the prevention of disease, now conducted by hospitals and dispensaries, to arrange in the order of their importance and practicability successive steps for the extension of such work and to prepare methods for its financial support, and for its correlation with similar work of other agencies, public and private."

The following are extracts from the first report of this committee:

"The trend of modern medicine is strongly in the direction of prevention, and the hospital, reflecting as it does the progress of medicine, must follow this trend. A hospital is not fulfilling its duty to its patients unless it combines with the curative work of its wards sufficient preventive work of a clinical nature to minimize the chance of recurrence of disease. * * * Every hospital in this class (large general hospitals) needs a social service department. * * * The work of the social service department should be planned so as not to duplicate the work of charity organizations and municipal departments already covering their special fields. The cooperation and assistance of these organizations and departments should be enlisted, wherever possible, in the preventive work of the hospital. The social service department is the chief agent through which this outside cooperation is practically secured. * * * Finally, we should bear in mind the use of literature as a means of educational and preventive work along health lines. The hospital may well be a center from which will be distributed printed information concerning diseases, such as tuberculosis, typhoid, or instructing in hygiene. A large number of leaflets and pamphlets have been prepared by public and private agencies for such use. It should, however, be borne in mind that merely to hand out literature does not usually amount to much practical service."

It will be evident that hospitals have the opportunity to occupy a strategic position in social hygiene work through these channels pointed out by the committee.

LETTERS *from our* FIELD EDITORS

Miners' Hospitals in the State of West Virginia

Under an act of the state legislature of West Virginia, passed in 1899, the state authorized the construction of three hospitals, to be known as Miners' Hospitals Nos. 1, 2 and 3. This same act also provided for the maintenance of these institutions, which were located, respectively, in Welch, McDowell County; McKenree, Fayette County; and Fairmont, Marion County.

These hospitals have an aggregate of 185 beds, the largest being at Welch with a capacity of 75. The state has invested in these three hospitals a total of $300,000 or more; the appropriation for each of the years 1913 and 1914 was $88,000.00, or about $29,000.00 for the maintenance of each institution.

As we understand it, these hospitals were founded as a political move to influence the vote of the miners of the state, of whom there are about 85,000, but not all of whom are in the district directly benefited by these Miners' Hospitals. As a matter of fact, railroad accident cases are also taken at these institutions.

Nevertheless, legislation of this sort may be said to be class legislation, pure and simple, for the reason that only those who are employees of the coal companies, or, in a few instances, railroad employees, are directly benefited by them. As a matter of practical working not all of the miners are treated in these hospitals, because the mines are scattered all over the state, and often, especially in the case of a serious accident, the patient is placed in the nearest hospital.

Miners' Hospitals, too, tend to pauperize the better grade of employees of coal companies, for it is the man on a large salary or in the office, receiving free treatment, who reaps perhaps an even greater benefit than the miner working in an isolated plant.

A strange condition of affairs now appears: unwittingly, the very legislature which inaugurated these hospitals legislated them out of existence by the passing of the Workman's Compensation Act in 1911, which makes it possible for a worker in any industry, insured under this act, to be cared for in the hospital of his choice; the pay for this care comes from state funds, and, while inadequate, it is a step in the right direction. But in order to excuse the existence of the Miners' Hospitals, the public service commission has ordered all public service cases in the neighborhood of the Miners' Hospitals cared for in these institutions. This eliminates what little support is afforded from the state fund in the care of those coming under the Compensation Act, and leaves all of the charity work for those private hospitals in their vicinity, as no real "charity" work is allowed in these Miners' Hospitals.

There is now on foot a movement inaugurated by the Marion County Medical Society of Fairmont, West Virginia, to ask the legislature to abolish these Miners' Hospitals and appropriate the money used for their support, and the amount obtained from the sale of the buildings and equipment, for the use of those hospitals which are now doing a great amount of charity work throughout the state without state aid.

PLINY O. CLARK.

The California Nursing Law

As is well known, the California legislature passed a law limiting the work of pupil nurses to eight hours in any one place, and permitting graduate nurses to work as long as they please. This law was in connection with the eight-hour law for women and was secured as a result of the representatives of the Nurses' Association in the City of San Francisco securing the aid of the Central Labor Council.

For years pupil nurses had been commercialized by certain institutions on the coast to an extent that was disgraceful. Inexperienced pupil nurses, even nurses in their first year of training, were sent out to private patients at full nursing rates, and bills for their services were rendered and collected by certain institutions.

The evil conditions existing in some institutions in this state, I understand, were given as the reason for the limiting of the time of the pupil nurses for work in any one institution. There exists no law that would prevent them from working very hard in one institution for eight hours a day and going to another institution and working eight hours a day more, and then going to another institution and working for eight hours, thus completing the twenty-four hours for one day.

There are now resting before the United States Supreme Court the arguments for and against the eight-hour law, and a test case is being tried by the State of California vs. the Samuel Merritt Hospital of Oakland, California. The argument for the defense was presented by the attorney for the hospital, Mr. John F. Bowie, attacking the constitutionality of the eight-hour law, and two briefs were presented by the representative of the labor organization defending the law. The hearing was held in Washington in the early part of January, and it is to be hoped that the decision will be handed down very shortly. In the interest of the charitable institutions of this state it is to be hoped that the decision will be in favor of the opponents of the present eight-hour law and that the nurses' and other similar organizations of this state effect such regulations of training schools as will be necessary to control the deplorable conditions which have existed.

It is irrational to believe that the time of employees, nurses and physicians, whose business and profession it is to care for the sick, should be limited. Sickness and disease are not subject to limitation in time and such attempts to regulate humanitarian methods should be combated by the entire medical profession. To supplant undesirable conditions by harmful laws is not constructive legislation, and I predict that if the eight-hour law is continued, as it is now written, that the charitable institutions will not be able to withstand the increased burden of existence, unless that burden is carried by the patients, many of whom are working people.

H. T. SUMMERSGILL.

Miss Maude Landis, R. N., has accepted the superintendency of the Edward W. Sparrow Hospital, at Lansing, Mich., vice Miss Mary Trafford, resigned. Miss Landis goes to the Michigan city from Missouri. She is a graduate of the Scarritt Training School, of Kansas City, and was for several years in charge of the Scarritt Hospital, and served more than seven years as superintendent of Levering Hospital, at Hannibal. She has been a member of the Missouri state board for the examination and registration of nurses for five years.

LETTERS TO THE EDITOR

Recognition of Hospital Architects

To the Editor of THE MODERN HOSPITAL:

I was particularly interested in the article in your February number by Dr. Oliver H. Bartine, of the New York Society for the Relief of the Ruptured and Crippled, on "Building the Hospital—Organization and Methods."

Had an architect, whose practice in the exclusive planning of hospitals for the last twelve years, as mine has been, written this article, he could not have made it more concise, nor have struck the nail more squarely on the head. As a matter of fact, Dr. Bartine's statements were made in a manner in which no one on the "inside" could possibly have made them. The method of cooperation, as laid down by Dr. Bartine, is particularly interesting and timely.

Particularly striking in Dr. Bartine's paper was the clause upon the selection of the architect and consulting engineer solely upon the basis of the fee charged. Such a procedure is absurd, inasmuch as it precludes the possibility of getting service such as is required. When hospital boards and administrators arrive at the conclusion that they have a moral obligation to the public, and that anything that tends toward the cutting down of efficiency, through the fact that a maintenance charge is high because the hospital is not properly planned and equipped, and through this, perforce, neglecting their patients—then we will have reached a condition wherein this moral obligation becomes paramount.

The committee should investigate the previous work of the architect and consider and study its completeness and relative cost. (I commend most highly the reading of this article in the February number by all those who are contemplating the erection of such buildings.) If efficiency is the direct outcome of conscientious application, then the work for the erection of a hospital should be entrusted to those who are particularly qualified, through this efficiency, to design such buildings, just as in the same manner a surgeon or attorney receives reward for such successful service.

A man who has given up the general practice of architecture and who has for years devoted himself to this one class of buildings exclusively, is best qualified to design such buildings. I should say that there are at the present time in this country probably five men who are qualified as experts, and ten more who are competent architects in the designing of such buildings, and while I do not wish to give the opinion that the formation of a monopoly should be in the hands of these men, still I bespeak a word here for the untiring efforts of, say, these fifteen men, and to ask that at any rate they be given the recognition that they deserve.

As is stated in the article, the utilizing of manufacturers' or contractors' plans, especially for the mechanical equipment, is to be strongly condemned. Those men who have standardized and studied the needs of hospitals for years can and do write specifications and make plans entirely independent of any manufacturer, but upon which any manufacturer can give his figures conscientiously and precisely.

Much has been said heretofore relative to the matter of competitions. Competitions do not bring out the best men. Only recently in a paper which was read before the first convention of architects, held in this state, I made the statement that I was not advocating a position of arrogance nor one of usurpation of the disposition of the client's funds, but did insist that the rights of the architects are clearly defined, and also stated further that I would like to see the organization take the absolute stand that none of its members go into any competition.

Less than 10 percent of all competitions which are held are held upon a purely honest procedure. Further, they are held directly in violation of the canon of ethics as laid down by the American Institute of Architects for competitions. My own experience, in former years, has been that when I attempted to go into a competition, my plans were invariably used by some local man, who had the necessary "pull" to get the work, and I did not receive even the scant courtesy of an acknowledgment, to say nothing of compensation for my ideas. This is not only unprofessional, but is contrary to ethics, and all common decency and honesty. I think I speak for all men who are devoting their time and energy to hospital work exclusively when I say that they will go into no competition, for they have all had the same experience.

Nothing further need be said relative to Dr. Bartine's article, inasmuch as it is complete in itself, but I do think that the article is not only timely, but is worthy of very careful consideration and should be followed out logically.

MEYER J. STURM.

Power Dishwashing Machines

To the Editor of THE MODERN HOSPITAL:

In your January number, under your heading, "The Hospital Kitchen," appears an article on "Hand Versus Power Dishwashing Machines." The writer of that article evidently did not have all the facts, or is not properly conversant with the methods of the most efficient dishwashers on the market.

He states: "Where a small quantity of dishes is to be washed, one basketful after another can be agitated in the water by hand by the attendant, who otherwise stands idle while the power does the agitating."

No matter what kind of a dishwashing machine is used, the operator is never idle. If a power machine is used, the operator stacks dishes in racks while the machine does the washing; but if it is a hand-power machine the operator must wash the dishes in the machine and then stop washing to unload and reload the racks.

He further states: "For a quantity of dishes not exceeding 1,500 per hour, hand-power produces the same results as power, and eliminates the cost of motor, the pump, and the current to run it."

The only hand-power dishwashers on the market are machines in which racks of dishes are immersed in tanks of water, and the refuse and grease from the dishes soon contaminates the water, which leaves the dishes greasy. Furthermore, the limited size of the tanks necessitates the use of small racks, in which dishes are piled one against another, resulting in chipping and breakage.

There are power machines that compare in capacity to hand-power dishwashers, but they are much more efficient. They wash dishes with water that is always free from grease and refuse, and rinse them with boiling water, absolutely clean. The construction of the dish racks prevents breakage. The cost of electric current to run such a machine is from two to four cents per hour.

So it will be seen that the hand-power machines are as efficient as power tank machines, but are certainly not to be compared in economy or efficiency to the more modern power dishwashers.

BROMLEY-MERSELES MFG. CO.

A movement for a new hospital has been launched at Greenville, Mich.

FOREIGN CORRESPONDENCE

Surgical Experiences of the War

These may be considered under the three heads: (1) the nature of the missiles used; (2) the character of the wounds inflicted, and (3) the methods of treatment that have been found to be successful.

NATURE OF THE MISSILES

The chief missiles employed in modern warfare are rifle bullets, common shell which bursts on concussion, and shrapnel shell. The rifle ammunition has the following dimensions and velocity:

	Rifle	Caliber, inches	Weight, grains	Velocity in foot-seconds, Muzzle	500 yards	1000 yards
British.	Mark VII	0.303	174	2440	1510	1020
French.	Lebel	0.315	198	2380	1639	1141
German.	Spitze	0.311	154	2970	1780	1090

All these bullets are sharp-nosed (the German being the most pointed) with a sloping shoulder, to diminish air resistance. The British and German bullets have a hardened lead core, with a hard sheath, open at the base; in the former the sheath is of cupro-nickel, in the latter of ferro-nickel; the nickel sheath is used because lead would be too soft to take the rifle grooves without detachment of fragments. The extremely pointed shape of the German bullet causes its center of gravity to be near the base, so that on meeting with resistance it may turn over, thus producing a more severe wound.

Shrapnel shell (so named from its inventor) is filled with spherical bullets which, when the shell bursts, are impelled forward by their initial velocity, and discharged over a wide area; it is now the chief artillery projectile. Sir Victor Horsley, F. R. S., made a series of experiments as to the effects of the British bullet and of the flat-nosed revolver bullet (Mark IV), which had been alleged semi-officially in Germany to be of a "Dum-dum"[1] or expanding pattern; and showed that both are strictly in accordance with the terms of the Hague Convention. Experimental investigations had, however, previously shown that with short range (up to 400 yards) and high velocity, the Lee-Enfield bullet (British), when passing through resistant structures, produces effects of such extent and severity as to look as if caused by explosions within the tissues. M. Tuffier, of the Beaujon Hospital in Paris, has recorded the same experience among wounded Germans, where the bullet had struck bone. In order to prove the use of prohibited bullets, such as the Dum-dum or similar pattern, they must be found in the magazine or bandolier of the combatant.

Arrows may be discharged from aeroplanes; their length is stated to be 4½ inches, and their weight 320 grains.

[1]So named from the place of manufacture in India, this bullet being used against native tribesmen, upon whom the ordinary missile has very slight stopping effect.

CHARACTER OF THE WOUNDS

A large proportion of the wounds are due to sharp-pointed, narrow bullets, which pass through the tissues, with small apertures of entrance and exit; these scabbing over and seldom requiring treatment, though the exit wound may be larger and become septic. Professor Payr, of Leipzig, has noted that perforation of stomach and intestine may occur, and yet be followed by spontaneous closure of the wound, the patient recovering under conservative treatment. Shrapnel bullets make larger orifices, both of entrance and exit, and do not so often scab over. In the navy, nearly all wounds are caused by fragments of shell, or by portions of the vessel broken off by shell, which cause the wounds to be lacerated; and these are also found, of course, on the battle-field.

Sepsis has been present to a great extent. Sir Watson Cheyne stated that all the wounds that he had come across had become septic, some of them very badly so. One cause of this has been the length of time that must generally elapse before treatment can be commenced. In former days, when actions were not on such a gigantic scale, ambulance wagons picked up the wounded on the field, and treatment could often be started soon after the wound had been received. Under present conditions this is hardly possible; for one reason, the combatants may be too far off from each other for the Red Cross badge to be recognizable; the wagons cannot be brought up so near; consequently it has often been many hours—even some days—before the wounded could be attended to. Even if there is a medical officer in the trenches, he can do little to prevent infection; the field hospital may be some miles away, and the number of wounded to be transported very large. In naval warfare, also, conditions are changed; during an action only those engaged in the fight are on deck, so long as the battle continues. The wounded are transferred to a hospital ship as soon as possible in some quick vessel, such as a destroyer; but these do not generally carry a surgeon, therefore little can be done during transit. Other causes for the occurrence of sepsis are: size and complexity of the wound, rendering thorough disinfection impossible; and absence of any attempt at disinfection in the first instance. Such is Sir Watson Cheyne's explanation of the great frequency of sepsis in wounds during the present war. On the other hand, it has been stated that ordinary pus organisms seem to have been often delayed in development, owing to the presence of anaërobes, such as the organisms of tetanus and malignant œdema and *B. aerogenes capsulatus*.

The apparently "explosive" effect of rifle bullets has already been mentioned; it has attracted a good deal of attention, and has been described by Prof. Kraske, on the German side, in similar terms. In some cases, however, the bullet had passed right through one or more organs, scarcely causing any symptoms, and leaving the general condition satisfactory.

On account of so much of the fighting having taken place in trenches, wounds of the upper extremities, particularly of the hands, have been very numerous; also those of the neck and shoulders, as pointed out by Sir Frederick Eve. He has also drawn attention to the frequency of concussion paralysis, either local and transient, or sometimes of the central nervous system and persistent; it has been ascertained that extensive degeneration of the gray matter may result without fracture or gross lesion of the spinal cord. Lieutenant T. R. Elliott, F. R. S., has described cases of this kind, which might be mistaken for functional paraplegia, or even for neurasthenia or hysterical simulation. When a shell bursts by the side of a

deeply cut trench, the sides of the trench are driven inwards, crushing, or even burying, the men in the trench. Thus the vertebral column is forcibly flexed, its ligaments stretched, and hemorrhages produced in the dorsal muscles; the spinal cord is injured at the same time. Functional nervous disorders, such as tremor, paralysis, or defects of vision, hearing, or speech, may also result from fright.

Inspector General Delorme, of the French army, has described a series of 700 surgical cases at Blaye. These were prisoners of war, the survivors of the German army left on the field after the battle on the Marne, presumably the most serious cases, deemed unfit to be moved to the German base hospital. Most wounds were serious, and also septic; their dressings had not been changed for six or seven days. Nevertheless the only amputation he found it necessary to perform was that of a single finger. This, he holds, justifies his previous teaching that the primary treatment of compound fractures and the like, however serious, should always be conservative.

Tetanus.—An outstanding feature in the surgery of the present war has been the large number of cases of tetanus, and emphysematous traumatic gangrene, commonly known as "gas gangrene." The tetanus germ is widely diffused under normal circumstances, as was found to be the case some years ago in India, when attacks supervened on such a trivial wound as is made by the needle for hypodermic injection of quinine; the reduction of resistance so caused allowing development of *B. tetani.*

Under the conditions prevailing in the present campaign, when men are living in trenches, and personal cleanliness is unattainable, wound contamination by this organism is not surprising. The character of the soil, viz., agricultural soil that has been long under cultivation, has of course increased the likelihood of infection.

Fortunately the medical authorities, both British and French, have been alive to this danger from the beginning; supplies of anti-tetanic serum were sent to the front, and the remedy has been used in all developed cases, and in cases where an attack seemed to threaten. Before long the serum came to be used prophylactically and systematically; every wounded man was given an injection at Railhead, on being sent down from the front. At the French hospitals a prophylactic injection is given to surgical patients on admission; this has had good results. M. Tuffier does not think that the prevalence has been at all due to the employment of trucks for conveying wounded, that had previously been used for horses; it is in wounds that have been soiled by earth, especially wounds of the extremities, that infection most often occurs. The incidence of tetanus appears to have been irregular in different parts of the war area even from the beginning. Sir Havelock Charles reported in the early part of November that tetanus seemed to have stopped, and gangrene to be in comparative abeyance.

With reference to the prevalence of *emphysematous,* or *spreading, gangrene,* or "gas gangrene," a report has been issued by Sir Anthony Bowlby and Dr. Sydney Rowlands, mainly the result of work done in the clearing hospitals. The bacillus of malignant œdema was identified from a typical case affecting the hand; and in a sample of earth from a trench a similar spore-bearing anaërobic organism was isolated. The gangrene has not been found to occur except in wounds of the extremities, which, however, may be of quite a slight degree of severity.

At the beginning of the war it had been expected, or hoped, that aseptic treatment of wounds might be carried out, but it was very soon found necessary to revert to antiseptic. The general plan of wound treatment has been as follows: (1) the application of the first field dressing,[1] as soon as possible, by the patient or a comrade; (2) on arrival at a field ambulance this dressing is changed; (3) at the clearing hospital the wound is cleansed, if necessary, and painted freely with an alcoholic solution of iodine; this being repeated, if required, on the journey; (4) at the base hospital simple bullet wounds are covered with dry bicyanide gauze; large and septic wounds are dressed with moist antiseptic compresses, carbolic, perchloride, creolin or lysol being used; also irrigation with hydrogen peroxide or iodine (one drachm of tincture to the pint of water).

Sir W. Watson Cheyne opened a discussion on the subject at the Medical Society of London in November, when many surgeons related their experiences. He stated (referring to naval cases) that all the wounds which he had come across were septic. For wounds that come under the surgeon's hands within twenty-four hours (or in earth-soiled wounds within 48 hours) he advised the use of chemical antiseptics to destroy the organisms; recommending liquefied carbolic acid, which kills spores in a very few minutes. The patient having been anesthetized, any bleeding is controlled by the tourniquet, or by clamping vessels; the skin is then scrubbed with one in twenty carbolic lotion and ether soap, shaved, again washed with carbolic lotion, and then covered with a cloth saturated with the same. For disinfecting the interior of the wound, the blood must be swabbed out, the wound made as dry as possible, any soiled skin cut away, and then a sponge, dipped in liquefied carbolic acid, carefully and thoroughly applied to the whole surface of the wound and all its recesses; this may have to be repeated. In the case of a large wound it may be well, after five minutes, to wash it out with one in twenty carbolic lotion, and then with saline solution to get rid of excess of carbolic acid and reduce the chance of absorption. When disinfection is completed, the vessels are tied and a drainage tube inserted, no attempt being made to stitch up the original wound. An antiseptic dressing is then applied, wool impregnated with salicylic acid being recommended, and a piece of cyanide gauze interposed over the wound, so as to keep the salicylate acid from the skin. This thorough disinfection can only be carried out at a field hospital; in the field itself all that can be done is to prevent further entrance of dirt; soluble bougies containing 1½ grains carbolic acid might be used, or gauze soaked in strong iodine solution pushed into the wound and left there. If more than twenty-four hours have elapsed, the only antiseptic treatment recommended is hydrogen peroxide, or washing out with normal saline solution. Sir Watson Cheyne holds that it is a mistake to object to strong antiseptics on the ground that they may cause a slough; if they did do so, he says, it would not matter, for it would be absorbed like any other piece of aseptic tissue. Prof. F. M. Caird pointed out that the dangers of carbolic acid poisoning and gangrene have been much exaggerated; and that such accidents are due to the use of inferior and imperfectly dissolved solutions, as moist dressings beneath an impermeable covering. Sir Rickman Godlee agrees with the antiseptic treatment, as does Sir Victor Horsley, who, however, prefers petrol as the best cleanser, and next to this alcohol. Sir W. J. Collins considers that the dry dressings of aseptic surgery are an anachronism, and, except in a few instances, out of

[1]This consists of a piece of cotton gauze containing one percent sal alembroth, tinted blue, folded into a pad, with a cotton bandage and safety pin; two such are enclosed in a khaki cover; the packet measures 4¼x3⅛x⅞ inch, and is carried in the pocket on right side of coat skirt. Latterly, according to a statement by Mr. Tennant, in the House of Commons, a small amount of tincture of iodine has been supplied to each officer and man, for immediate application.

place. Sir Havelock Charles believes that antiseptic treatment is demanded by the conditions, and that "pure aseptic surgery would be an absolute danger." Although considerable difference of opinion exists among surgeons as to the best antiseptic for wound treatment, there is complete agreement that there is necessity for some germicidal application, and that aseptic treatment is impossible.

The subsequent treatment at the base hospital or elsewhere is generally on the same lines; opening up the wound freely, washing with hydrogen peroxide or weak permanganate solution, and drainage. The organisms commonly found have been staphylococci, streptococci and proteus.

M. Tuffier, of the Beaujon Hospital, Paris, came to four general conclusions as regards wound treatment: (1) antisepsis is incontestably superior to asepsis; (2) for infected wounds, the main point to be kept in mind is efficient drainage; (3) for wounds of the limbs, the methods of conservative surgery should be followed, which is the principle accepted by the French army surgeons; each case to be dealt with on its own merits, and the risks of septicemia and gangrene being kept in mind; (4) it should be an absolute rule to close wounds. Inspector General Chavasse, of the French Medical Service, also advises antiseptic treatment, both in the first instance and for operations; he is averse to changing the dressings more often than is absolutely necessary, preferring to moisten the outside of the dressing with some deodorant antiseptic, and adding a further layer of cotton wool. For cleansing large wounds he uses oxygenated water and hot sterile artificial serum. M. Hartmann, in a recent address to the Academy of Medicine in Paris, said that he had found that iodine tincture was useful only in non-infected bullet wounds; he trusted to hydrogen peroxide or a strong carbolic acid solution.

With regard to wound treatment by the German surgeons there seems more difference of opinion than with the British and French authorities. Surgeon General O. von Angerer holds conservative views: if the wounds of entry and exit are small, he treats them as if uninfected, applying tincture of iodine and plugging with iodoform gauze; this plug is removed before applying a sterile dry dressing. For simple, uncomplicated wounds he does not use collodion (to fix harmful germs that may be present), nor does he lay open a wound, disinfect the track of the bullet, inject antiseptics or insert a drain. With extensive wounds, involving injury to large blood vessels, etc., the track must be explored, crushed tissues removed, and blood vessels ligatured; irrigation with saline solution and light plugging with iodoform gauze complete the operation. Even if a bone has been splintered he advises conservative treatment, with immobilization, provided the wounds are not large and there is not much laceration. Naturally, he insists on extreme cleanliness, using a soap containing 80 percent of alcohol (which is a potent disinfectant) for the hands, and using rubber gloves as well. Dr. Linkenhold first cleans the skin with benzine, and then applies iodine, fixed with a coating of varnish (turpentine 1, colophony resin 50, ether 50 parts), and strengthened by a single layer of muslin; this does not injure the skin, and affords more protection than iodine tincture, which evaporates during the operation.

Lieut. R. Blair treated seventeen cases of *tetanus* at the Herbert Hospital, Woolwich. Six died, nine recovered, two were still under treatment. The wounds were mostly severe, and all very dirty; four had had prophylactic doses of serum before admission, and three of these died. The treatment adopted was intrathecal injection of 4,000 units daily, using a light anesthesia. Morphine, chloral and bromide were administered; also chloretone (40 grains in two ounces of olive oil per rectum twice or thrice daily); when the chloretone was retained, it relieved the spasms for several hours.

Emphysematous gangrene, observed most often in shell wounds, where particles of clothing had been carried into the tissues, was found difficult to treat satisfactorily; the actual cautery and injections of hydrogen peroxide were found insufficient; and even amputation, in five cases, did not arrest the disease. Avoidance of tight bandages, relief of tension, scrupulous sterilization of instruments, etc., avoidance of mud contamination, and isolation of the patient are the measures indicated. M. Tuffier advocates the earliest possible extraction of foreign bodies in such cases.

A Retired British Army Surgeon.

Nurses to Be Weighed and "Observed"

Perhaps it would be of interest to the hospital to know of a new idea which I have put into effect in the University of California Hospital:

I have issued orders compelling every nurse to be weighed every four months, and if any nurse shows a loss in weight she is compelled to undergo a physical examination and is then kept under observation for some time. As a result of this observation we have dropped two nurses from our training school.

I have also adopted a method whereby the five highest standing nurses at the end of their second year are permitted to elect their training for the last six months of their course.

H. T. Summersgill,
Superintendent.

A Gorgas Medal, to be awarded annually in honor of Surgeon-General Gorgas, U. S. A., has been established by the Medical Reserve Corps Association, New York State Division. Competition for this medal is open to officers of the Medical Corps of the United States Army, the Medical Reserve Corps of the United States Army and the Medical Corps of the organized militia. Officers may submit papers on any subject of a medico-military nature. The following board has been appointed by General Gorgas to act upon papers submitted: Colonel Charles Richard, Lieutenant Colonel Champs C. McCulloch, Jr., and Major Eugene R. Whitmore, Army Medical Corps. These officers are members of the faculty of the Army Medical School and have sole authority to appoint the time that papers are to be submitted and to pass upon their merits. All inquiries should be addressed to one of these officers.

The first report of the Federal Government's study of infant mortality discloses the fact that the employment of mothers in heavy work, artificial feeding, poor sanitary conditions and insufficient earnings of fathers have an important influence on infant mortality.

Sarah M. Cleghorn, well-known investigator, has gone to the heart of the child labor belt in South Carolina, whence she sends this to the New York *Tribune:*

"The golf links lie so near the mill
That almost every day
The laboring children can look out
And watch the men at play."

—*Survey*, Feb. 13, 1915.

In view of the heart-breaking conditions of child labor in South Carolina, it seems the irony of fate that the little children not only are compelled to spend long, weary hours in the mills, but should be further crucified by watching their affluent employers enjoying the leisure made possible by the earnings derived from juvenile employment.

NEW INSTRUMENTS *and* APPLIANCES

Vincenz Mueller, Technical Editor.
Geo. W. Wallerich, Associate Editor.

The Electrocardiograph.

Though yet in its infancy, the new science of electrocardiography has already become essential to the modern diagnosis and treatment of cardiac patients. This method furnishes a direct means of examining the condition of the heart muscle during each and every phase of its action. These electric curves have revealed a number of new physical signs, especially those associated with the abnormal distribution and arrangement of the muscles of the heart.

It has long been known that minute electric currents are developed in the heart at each contraction of this organ and modern electrocardiography is the outcome of this discovery. These currents are very small and it was not until Einthoven, a Dutch physiologist, invented the "string galvanometer" that a sufficiently sensitive means for measuring these currents was available.

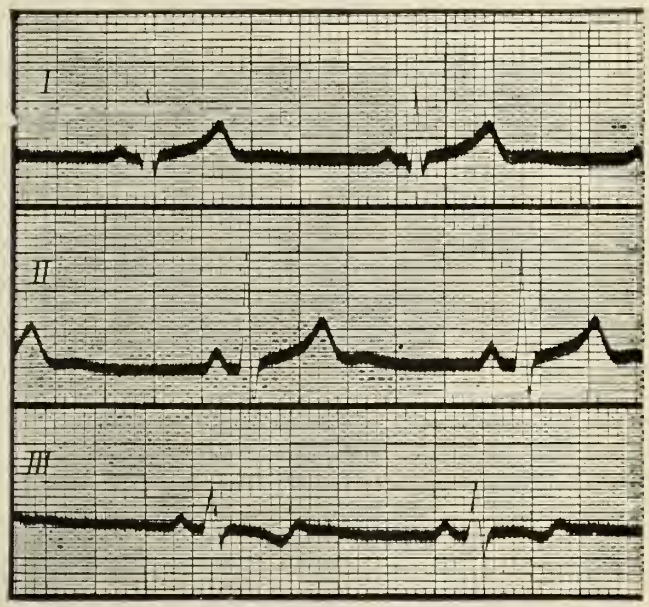
A complete electrocardiographic equipment.

The electrical currents generated in the human body consist of two kinds, an intermittent current produced at each contraction of the heart, and a continuous current produced by general cell metabolism, called the skin currents. These currents are carried to the skin surface of the body, and by placing certain parts, such as both arms and one leg, in contact with suitable electrodes, the current may be conducted to the galvanometer and photographically recorded. It is the study of the direction, the time relations, and the magnitude of these currents which constitutes the science of electrocardiography.

A complete electrocardiographic outfit consists of essentially a powerful electromagnet, the poles of which are closely approximated. In the narrow gap between the poles is stretched an extremely fine silvered glass fiber, the diameter of which is much finer than that of a single strand of spider's web and about four inches long.

An optical system, similar to that of an ordinary microscope, is so arranged in the galvanometer that the fiber is stretched between the objective and the condenser. A powerful arc lamp furnishes the illumination, and as the fiber moves in response to the varying potential of the heart currents, its image, magnified 600 times, is thrown on the lens of a camera and the fiber movements photographically recorded.

Since the magnetic poles of the galvanometer are electrostatically of the same potential, the fiber cannot be attracted unequally toward either pole, so that as the currents from the body pass through the fiber, it is forced to move in the direction at right angles to the lines of magnetic force. These movements of the fiber are photographically recorded by means of suitable cameras. Two types of camera are used, the plate and the continuous paper roll. For general use the plate camera is preferable, as by means of it the three leads from each patient may be recorded on the same plate. This greatly facilitates study of the tracings and is convenient for filing and reference. Prints, of course, may be made from these plates whenever desired. With the paper camera, a continuous roll of bromide paper or film is used, so that cardiac irregularities occurring at irregular or prolonged intervals may be photographed.



The above shows a complete electrocardiogram of a patient; lead I being from right arm to left arm; lead II, right arm to left leg; lead III, left arm to left leg.

The time intervals in which these electric changes in the heart occur are extremely small and it is necessary that they be correctly measured. To accomplish this, the current from a four-volt battery is connected through a standard turning fork standardized to vibrate fifty times per second. In the circuit with this tuning fork and battery is a rotary time marker, consisting of a motor having ten points of contact. Since the standard tuning fork makes and breaks the continuous current to the battery fifty times per second, and there are ten points of contact on the time-marking motor, the shaft on the latter revolves exactly five times per second. By simply placing a spoked disc or wheel on the shaft of this motor and so arranging it that each spoke cuts off the light at the point where the rays converge in front of the ocular, a vertical line representing the time interval is photographed directly on the electrocardiogram.

In order that the amplitude of the heart currents may be accurately measured, a millimeter scale, which has been photographically measured for the standard magnification used, is etched on the lens of the camera. As the rays of light pass through this lens the measurements of the etched scale are photographically represented on the plate by parallel horizontal lines which represent 1-10,000 of a volt. Thus, the magnitude of the current generated in the heart at any particular phase of its action is directly indicated by the amplitude of the tracings as compared to the parallel lines.

It is also necessary that the sensitivity of the galvanometer may be standardized so that the electrocardiogram of one patient may be compared with another. The standard of sensitivity generally used requires a deflection of one centimeter of the fiber in response to one millivolt of current.

Included with a complete electrocardiographic outfit is a phonocardiograph apparatus. This addition is for the purpose of recording the sounds produced by the heart. This is accomplished by conducting the sounds through an ordinary stethoscope receiver and tube to the sensitive diaphragm of a microphone. The microphone is electrically connected through the transformer and a resistance to the fiber terminal and as the varying sounds of the beating heart impinge against the diaphragm of the microphone they cause a corresponding variation in the resistance to the continuous current flowing through it, and the fiber moves synchronously and in direct proportion to this resistance. Not only is it thus possible to record the volume of sound, but the pitch or tone is also indicated and the exact position of any sound or murmur can be settled in respect to its position in the main cycle of the heart.

To facilitate the simultaneous recording of both phono- and electro-cardiograms on the same photographic plate a double fiber case, containing two independently operated silvered glass fibers, is suspended between the poles of the galvanometer. This is a most important addition to the outfit and is of the greatest value in studying the heart sounds.

The Cambridge electrocardiographic outfits, manufactured by the Cambridge Scientific Instrument Company of Cambridge, England, have already been installed in a large number of both European and American institutions. This instrument is of very robust construction, especially as regards the arrangements for protecting the delicate glass fiber. The control board of the apparatus is another very convenient feature, as it centers all the different manipulations for operating the outfit in this one board, which is placed convenient to the hand of the operator on the front of the apparatus.

Another New X-Ray Tube

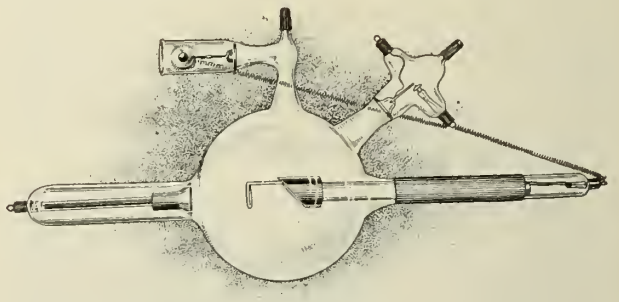
Every experienced operator of x-ray apparatus is familiar with the annoying habit that tubes have of becoming "cranky," owing to imperfect vacuum control. Some tubes average better than others, but the element of uncertainty as to how they will "take" the current has always been present, and results vary accordingly.

The announcement that this difficulty has been overcome will, therefore, be received with no little interest by all who can appreciate an important step forward in roentgenological equipment.

Experiments have been continually under way in the Snook-Roentgen laboratories at Philadelphia for more than two years with a view to developing an x-ray tube in which the operator could control the vacuum at will. The result is now brought to the attention of the public in the new hydrogen tube. Practical day-by-day work in prominent hospital laboratories for many months past would seem to indicate that the announcement is not prematurely made and that the new tube does, in fact, possess such characteristics as insure a warm welcome in every laboratory where uniformity of result and economy in upkeep receive due consideration.

An interesting problem in electro-physics is involved in the principle by which the vacuum in the hydrogen tube can readily be controlled at the will of the operator. A certain metal tube, when heated to redness by a current of approximately twenty milliamperes, permits chemically pure hydrogen to diffuse through it by osmosis—but is still impermeable to atmospheric air. By an ingenious utilization of this principle, hydrogen can be made to enter into the vacuum in minute quantities, or to actually pass out therefrom, raising or lowering the vacuum in accordance with the length of time the current is passed through either the raising or lowering attachment.

Over the entire range of the practical working vacuum of any x-ray tube, the vacuum of the hydrogen tube can be readily raised or lowered; about one inch of equivalent parallel spark gap for each twenty seconds of corresponding use of the regulator.



The Snook Hydrogen X-ray Tube.

Since hydrogen is the lightest of all known gases, and does not readily combine with metallic surfaces, the new tube heats less and is far more stable than any of the former types supplied with regulators that contain substances capable of evolving oxygen, either free or combined. Since no other gas than chemically pure hydrogen is permitted to enter the tube, the vacuum is remarkably steady and dependable.

Low electrical resistance accompanied by high penetration enables the hydrogen tube to "take the current" well. Owing to relatively small fluctuation in resistance there is little danger of trouble from "puncture" or "flashover."

The high penetration is remarkable, comparative radiograms invariably showing one Benoist number higher than any other gas tube under the same operating conditions.

The hydrogen "regulator" can be recharged indefinitely without repumping the tube.

In addition to the perfection of the standard type of hydrogen tube, an air-cooled type is also announced that permits regulation of vacuum by exactly the same methods.

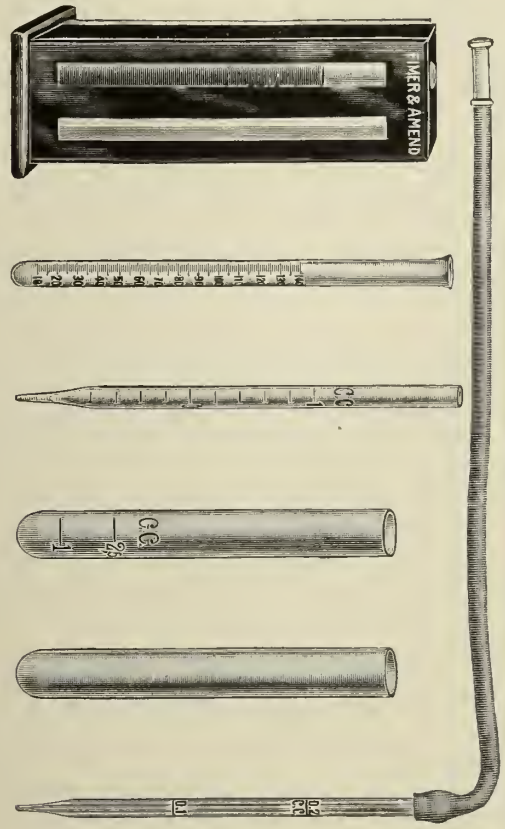
It is believed that the air-cooled hydrogen tube will serve every possible purpose that can be desired in the busiest of hospital laboratories. Its use permits long fluoroscopic work to be punctuated by making radiograms, as many and as often as desired. Deep therapy, in massive doses, alternated by fluoroscopy and radiography, can be made a matter of daily routine.

Micro-Saccharimeter for Estimating Sugar in the Blood

BY DR. A. A. EPSTEIN

The micro-saccharimeter is an elaboration of the Sahli-Gower hemoglobinometer colorimeter. The apparatus has proven desirable, especially in clinical work, with children and adults, inasmuch as only a small quantity of blood is necessary and the examination can be completed in from seven to ten minutes.

Dr. Epstein reports that his method is an adaptation of the one devised by Lewis and Benedict (but only on a small scale) for estimating the sugar contents in blood. The original method, however, although admirable in point of simplicity and accuracy, entails the use of 2cc. of blood and the employment of costly colorimetric apparatus. To overcome this drawback and to render the estimation of blood-sugar more suitable for general clinical and laboratory work, Dr. Epstein adopted the Sahli-Gower hemoglobin-colorimeter, with the addition of suitable color standards. By this means, he found it possible to work with small quantities of reagents and to estimate with precision the amount of sugar present in 0.2cc or even in 0.1cc of blood.



Dr. Epstein's micro-saccharimeter.

This small quantity of blood is easily secured from the tip of the finger or the lobe of the ear, by means of the blood pipette, and is discharged into the tube containing the fluorid solution.

The Epstein micro-saccharimeter consists of the parts illustrated here, which are put up in a case, and in addition the three solutions required, picric acid, sodium carbonate and sodium fluorid. Full directions as to the technic are furnished with the apparatus.

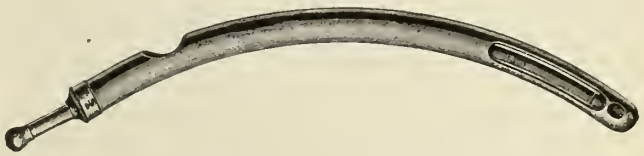
Those who already possess a Sahli-Gower hemoglobinometer need only purchase the color standards A and B; boiling tubes; tube graduated at two marks 1cc and two 5cc; pipette with marks at 1/10 and 2/10, with rubber tube and mouth piece; Mohr's pipette, graduated in 1cc in 1/10; a small funnel; a dropper with rubber bulb, and the solutions previously mentioned.

Improved Douche for Use in Obstetric Cases

BY DR. W. D. INGLIS

Various types of uterine douches have been offered to the profession in the past, but most of them have one serious defect, which is that they are not sufficiently large to allow a free return flow of the solution and therefore soon become clogged with blood clots.

This new instrument is chiefly designed for intra-uterine irrigation, with hot solution. It is so constructed that the inflow is directed to the sides of the uterus, and the outflow is so large that it is practically impossible for the instrument to become clogged. The return empties outside of the vaginal tract, therefore solutions of 120° to 130° Fahrenheit may be used upon a conscious patient with



Improved Douche for Obstetric Cases.

little discomfort. In postpartum hemorrhage this is very desirable, because it is well known that there are few measures that can be employed which are equal to heat as a stimulant to a so-called atonic uterus.

The illustration does not give a correct idea as to the size of the instrument. The diameter of the outer tube is 20mm. and that of the inner tube 8mm., and the total length is 38cm. A return flow catheter of this type in the delivery room in the hospital will afford the obstetrician an effective means of combating the dreaded hemorrhage which sometimes follows labor.

Pocket Flash Light

A new pocket flash light has recently been put on the market, which has several good features not possessed by any of the many types which have been offered in the past.

The best feature is the convenient shape, an imitation of a fountain pen, and its small size, 5¼ x ⅝ inches, just

Beacon Ideal Fountain Light.

a little larger than a good-sized fountain pen. The vest pocket clip acts as the contact and when carried in the pocket, the same as a pen, with the cloth of the pocket between the clip and the casing, contact is impossible, thus preventing useless consumption of the battery in the pocket, as very often occurs with the ordinary pocket light.

Following a number of crimes committed by paroled patients of the Illinois state hospitals for the insane, the state board of administration has issued an order revoking all existing paroles and directing that hereafter no patient of any state institution shall be permitted to go outside or beyond the institution grounds unless accompanied by a state or court official.

QUERIES and ANSWERS

Hours for Admission of Patients.

To the Editor of THE MODERN HOSPITAL:

Patients are brought or sent to our hospital at all hours of the day and night, although we have a rule that they will be received only between 9 a. m. and 5 p. m., except in emergency. Our busiest time for receiving patients is between 8 and 12 p. m. Is there any way to stop this, and is it fair to require our doctors to send in their patients between stated hours? A few of our board favor abritrarily refusing to accept patients that come in outside of hours—except in real emergency.

T. W. B., New England.

In other words, you and a few members of your lay board propose to decide for your doctors whether and when their patients need the hospital. Let us get this problem straight; it is a commonly known fact that really sick people get worse as night comes on; fevers rise, symptoms increase and often straighten out a diagnosis that may have been obscure. Often the doctor is making his round of visits just before night and can't be found; hence it is after supper—7 or 8 o'clock—before he sees the patient whom he is asked to see in a hurry. He finds conditions such that the patient should be got to the hospital as soon as possible; often the delay until morning may be hazardous.

Then again, the husband or father is away all day, and, though the doctor advised the hospital early in the morning, the folks at home cannot decide alone; that means night, long after dark, before things can be arranged.

The inconvenience of the present system should be put frankly to your doctors and they should cooperate with you as far as possible. Then the rest of the cure lies in having enough nurses and other help to handle the patients that come in. The ups and downs of sickness cannot be arranged by rules, and if you are going to run a hospital, the institution must accommodate its affairs to the exigencies of sickness, and not the other way about. You have no business to have stated hours for receiving patients, so far as your medical staff is to be bound by such rule.

Repainting the Hospital

To the Editor of THE MODERN HOSPITAL:

We must repaint almost our entire hospital this spring and are now making plans for it; our painter, one of our townspeople in the painting business, says we must remove all the paint over the place or he cannot guarantee a good job. Is this true, and how shall we proceed?

AN OHIO SUPERINTENDENT.

The best plan, of course, is to hire your own painter and make him work under your orders. There are so many men all over the country looking for employment just now that there should be no difficulty in finding an unemployed painter who knows his business and who can hire any number of helpers who can work under him. Flat work paint, such as that on your walls, need not be removed for your new painting operations this spring. You should go over your walls, before they are painted, with warm water and a weak solution of green soap, and wash them down thoroughly, and then paint over that. You cannot put fresh paint over varnish, as, for instance, on your woodwork and your shellacked floors. The varnish and paint must be removed from the woodwork and from the floors before you paint again. I should think it would be a rather costly proceeding for you to have your painting done by a man in the painting business. Most of those people pay scale wages and you are thinking about getting your work done at the time that they are busiest, so that it is going to cost you more than at any other time of the year. I am quite sure that the best way for you to do is to hire your painters and do your own work. The unions do not object to hospitals hiring mechanics in the best way they can, without reference to the scale—largely for the reason that hospitals hire their men by the year and find work for them at seasons when they would not find work on contracts and at scale prices.

Hospital for City of Six Thousand.

To the Editor of THE MODERN HOSPITAL:

We have a city of about 6,000 inhabitants and no hospital. The medical society, of which I am president, desires to make evident the need of such an institution to the public. Where may we obtain literature on the construction and operation and community need of hospitals so that the doctors may be able to present their subject properly? We should appreciate any suggestion that you will be able to give us.

PRESIDENT OF A COUNTY MEDICAL SOCIETY.

The census of 1910 gives the population of your city as 4,698. I have no doubt you have at least 6,000 population by this time and I imagine you will continue to grow. You have twelve physicians, according to the American Medical Directory, and you have no hospital—as you say.

We have become accustomed to figure in this country that a hospital bed is needed for every 150 of the population. If that is true, and we believe it to be a conservative rather than an exaggerated estimate, you should have 40 beds in your city, and I think by all means you ought to have a hospital that will provide for 40 beds now, and it ought to be built in such a way that an additional wing can be built at any time, to complete a very neat architectural design. You could build it, for instance, in the shape of the letter "L," facing on two streets, if you please, and at some later day you could build a second wing, making a "U" in shape. For the present you would build one of the horns of the "U" and the base, the base to be the administration part.

There is no doubt that a hospital such as we are thinking about would be of immense advantage to your town aside from its emergency value in caring for the actual sick. As the matter stands now you are without the assemblage of such hospital equipment as an x-ray plant, a bath department and the facilities to do surgical operations according to the most scientific modern methods. You have no nursing center in your town, indeed you can have no real health center because the health activities of a community must work out of some hospital.

Without a hospital your medical men cannot progress in the way they are entitled to do; they don't get the experience in the care of patients under the careful and trained administration of a hospital, and without this experience they are not able to give to your people even in private practice that high order of professional service to which people of today in every enlightened community are entitled. I think I should impress this particular point on your people, if you will permit me the suggestion. A hospital will give training and opportunity for practice to the medical men in that community such as they cannot

hope to have without such an institution, and in proportion as you have a good hospital or none at all just in such proportion will you have an able and up-to-date medical profession in your city.

Another point is that suppose one of your citizens is taken suddenly with an appendicitis, or, let's make it a keener emergency and let's say it is a ruptured extra-uterine pregnancy. Of course, the patient could be rushed into the private home or operating room of some physician, but the operator would not have the facilities to do the best operation that he knew how to do; he would not have the trained nursing; he would not have that expert care in the asepsis of his operating paraphernalia that a hospital could provide, and the net result would be that the patient would more than likely die, not because a bad or poor operation was performed, not because the surgeon was unable to perform a good operation, but because the people of the community had not provided him with the proper auxiliary for good surgery.

I think if these points are driven home to your people of the better class, the leaders of thought in the community, those who have money and influence, there is no doubt in my mind that they will back up and support your medical society in the creation of a proper hospital.

A 40-bed hospital ought to be built for about $80,000. You ought really to have a hundred thousand. That would give you plenty of money for equipment and the price of the ground. I think, though, that you ought to make some sort of arrangements for the permanent support of your hospital in the form of annual subscriptions from your well-to-do people, covering a period of years.

Such a hospital as I am thinking about should be self-supporting in the average American community or it should cost so little in the shape of a deficit that your people would not feel the burden at all.

Worthless Lumber on the Market

To the Editor of THE MODERN HOSPITAL:

We have had occasion to buy a lot of lumber recently, for shelves, for benches, for partitions, and some for flooring. The lumber seems to warp badly after it is on for a time; rosin or some discoloring substance comes through the paint; the floors and the tongue-and-grooved partitions open up and the whole result is bad everywhere. Is there no good lumber to be had, and if so, where can we buy it? Someone has suggested that we can buy good second-hand lumber from the wreckers in the large cities, and that it is the best because it is well seasoned.

AN IOWA TRUSTEE.

Lumber has jumped in price until it is almost prohibitive now. Good, well-seasoned lumber that will not contract under the heat of a hospital costs from $60 to $100 a thousand feet. Such prices are certainly prohibitive. The trouble is that lumber is rapidly disappearing and those who have it to sell find a ready market at exorbitant prices; consequently lumber mills are working overtime and nearly all of them have equipped great drying kilns where they wheel in carloads at a time. The physical conditions are not good for drying under such circumstances, and the result is that the pieces are dried only on the outside. As soon as the lumber is laid in place in the hospital it begins to dry naturally, by the evaporation of its native water, and there can be only one outcome, the discoloration of the paint, of which you write, and the warping of the timbers. No doubt the wreckers of old buildings take out lumber that, under ordinary conditions, would be ideal for building operations, but the trouble is that this second-hand lumber is full of nails and therefore difficult to handle. Old buildings used to have very heavy sleepers and studdings, two by eights and two by twelves, and a good deal of excellent flooring can be picked up from the second-hand dealers. If you could take this two-inch stuff and have it sawed again and planed, it would make the best possible lumber you could get hold of, but the sawmills will not saw it for you, because of the nails, and it really cannot be handled unless you can use it just as the pieces come. Your alternative is to do the best you can with the poorly dried stuff on the market or pay the exorbitant prices for thoroughly dried lumber.

Decorations for the Walls

To the Editor of THE MODERN HOSPITAL:

So many of our patients complain of the monotony of the walls and ceilings of our private rooms; some of them count the specks on the ceilings, others conjure up all sorts of grotesque forms in the checks and cracks in the paint. Years ago we removed all pictures to conform with sanitary requirements. Can't we do something in the way of decoration to overcome the everlasting sameness of the walls and ceilings? ONE WHO WANTS PICTURES.

The monotony of the scenery in the private rooms is a very common fault in American hospitals and probably in hospitals throughout the world. I think the pendulum has swung to the far extreme, and it doesn't seem to me such an outrageous violation of the proprieties of asepsis if we were to have a few good pictures on the walls of private rooms, provided they were thoroughly cleaned after each patient went home; the trouble is that that isn't done; the pictures are left hanging from one year to another, and the dust is allowed to accumulate; that is the reason why we have gone to the other extreme. Perhaps it is just as well; but something else really can be done about this question of diversion for patients in bed. There are great numbers of prints, etchings, engravings, chromos and color types of all sorts to be had. I saw this problem settled in an extremely good hospital not long since in the following fashion: a number of well selected prints were chosen and good places marked out for them on the walls; they were then pasted on with the same sort of paste that wall-paper hangers use, just cooked starch; it required a good deal of taste and care to paste them smoothly, so that there were no wrinkles. After they had dried well, the superintendent bought some very pretty stenciling paper that answered extremely well for an imprint of a frame, and the painter stenciled the frame around the picture. After that was dried well the painter went over the whole with a very thin coat of copal varnish; that is the same kind of varnish that artists use to cover their paintings with. It is perfectly transparent, does not give a high gloss and is a perfect protection when the walls are washed.

Rules for Staff Men

To the Editor of THE MODERN HOSPITAL:

Each one of our doctors seems to feel that he is a law unto himself in the hospital, and insists on making rules for each unusual incident that comes up; are there any rules anywhere that will cover all occasions where the staff is concerned, and is there any way by which the doctors can be made to obey rules even when they are made?

T. B. A., Louisiana.

There are no rules that would be of service in any hospital except the one for which they were made. Hospital rules must always be predicated on individual institutions and conditions. The point you bring up is a vital one. Without system no institution is really worth while, and if the doctors, the class of people most of all interested in good hospital administration, will not help to preserve system and proper administration methods, such methods cannot be made effective because, in a final analysis, every step of every piece of work finds its way back to the doctor and his patients. It seems to me the best way to do is

to draw up what you think are proper rules for your particular institution, considering everything; then call your medical staff together and ask them to help you create a set of rules for the government of the institution, on its medical side; tell them that "just for a framework" you have drawn up something, and submit your rules to them. Go over your draft with your doctors and it is my experience that doctors will be entirely reasonable about rules, except when one of their own cases is involved at the moment; and it is my experience that they will help you create a workable, effective and efficient set of rules. After these rules have been agreed upon, get the doctors to sign them with their approval, for the purpose of submission to the board of trustees. Then take the rules to your board and explain the situation to them, and get them to approve them. Now don't you see what you have to work on? You have a set of rules created by the doctors themselves, which you, as superintendent, have approved, and which have gone into the establishment of the hospital under the approval of the board of trustees. Now what is to happen if one of the doctors has some special case up for which he is asking unusual and unreasonable service? He is in open violation of a rule which he himself helped to create, and which has been approved for the working purposes of the institution by the board of trustees; and if the doctor persists in his violation of these rules, place the matter fairly before the board of trustees and let them determine whether they, or whether an individual physician in the hospital is running the institution.

Team Work in the Hospital

To the Editor of THE MODERN HOSPITAL:

I have just taken possession of a fifty-bed hospital as superintendent. I find a total absence of the "team work" that THE MODERN HOSPITAL has so often alluded to. Nobody seems to want to help anybody else, and each one seems to take a delight in embarrassing the work of everybody else. I am almost at my wit's end; what am I to do?

A DISCOURAGED SUPERINTENDENT.

Probably the reason why your board employed you was to straighten out the very condition of things to which you refer. The board members had probably not been able to even diagnose the case, and they thought that perhaps you might be able to do so. A competent superintendent does not lose courage in the presence of an emergency of that sort, but just begins to get interested when there is something difficult to do. Don't you think you had better look at your job in that way a little bit? I think the thing for you to do is to go to your board, give them a diagnosis of the case, tell them what you are finding and ask them frankly whether they will support you without reservation in the things that you may find it necessary to do. Be sure you have this out with them conclusively. If any board member has a pet in the hospital on the pay roll that he proposes to keep there, no matter what provocation, you may just as well admit at once that you can accomplish nothing; but if your board agree unreservedly to stand by you, then the thing for you to do is to cut out the sore with a knife—there is no other way. The first evidence you get of disloyalty, or want of cooperation, send for the offender and tell him or her just what you have found, and that you propose that it shall stop, and stop at once. If it is not stopped at once, dismiss the party, and pay him off immediately. He will run to his friend on the board; if he gets no satisfaction his case is settled. The repetition of that performance about three times will pretty nearly put your hospital into decent shape, but I would keep on dismissing people until I did get cooperation and team work. You certainly will not succeed in your administration without it.

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to THE MODERN HOSPITAL, Kitchen Department, Metropolitan Building, St. Louis.

The Object of This Department

This recently created department is expected to open a forum for discussion of all questions relating to the kitchen, storage and laundry departments in both the larger and smaller hospitals. The views and experiences of many persons having different problems in different classes of institutions, public and private, will be of the greatest value in disseminating information interesting to those who have this section of the hospital under their jurisdiction. It is therefore hoped that readers will communicate anything in the nature of improvements in the service departments, which may have been evolved in their institutions, so that their experience may benefit others. Any problems needing solution, submitted to the editor of this department, will be answered from the best sources of information obtainable on the particular subject, and any discussion of anything published in these columns will be welcomed, because the object of The Hospital Kitchen Department is, not dogmatically to lay down the law, but to provide a means for the dissemination of the best data obtainable from every source, and this object can best be attained by the cooperation of all those most interested in the subject.

Utensils for a New Hospital Kitchen

The lists of utensils furnished for the various kitchens of the new Cincinnati General Hospital, which appear in these columns, is not published as a model of what ought to constitute the equipment necessary to start the kitchens of a new hospital, but rather as a complete list of the things which may be wanted in a kitchen after it is started.

It would seem to be better in a new hospital to confine the lists at the start to the absolutely necessary articles, leaving a part of the appropriation available for adding to the list after the kitchen is running.

Experience teaches us that all cooks, male and female, have various ideas as to what utensils they want to produce the same culinary results; consequently, no matter what list of utensils is provided, it is almost certain that the new cook will not want a substantial part of it and will bemoan the absence of things necessary from his or her personal viewpoint. If, however, only the absolutely essential things are on hand, additions may be rapidly made to suit the demands of the cook in charge of each kitchen, provided these demands are within reason in the opinion of the superintendent.

Especially are the ideas of the persons brought up in the rough schools of public institution kitchens different from the views of those accustomed to the dainty kitchen

work of the diet kitchen or even the smaller private hospitals. The handling of foods in quantity precludes many of the niceties possible when comparatively small amounts are handled; and in consequence the ideas as to the utensils necessary also vary according to the school in which the person actually doing the cooking has been brought up.

Of course there are many utensils which must be provided in every kitchen in certain numbers in order to produce the food to be served, but once that limit is reached, the choice of the additions advisable will vary to some extent with every different person in charge of the kitchen. As the risk of having things on hand which are not wanted, coupled with the risk of having to buy things not provided, causes a double expenditure it would seem to be more prudent to proceed in the manner indicated above, than to decide in advance everything that the cook will need, instead of letting him or her decide that point as the necessity arises.

List of utensils in main kitchen of the Cincinnati General Hospital:

4 retired hotel plain ladles, Nos. 100-200-300-400.
4 retinned hotel pierced ladles, Nos. 100-200-300-400.
2 retinned hotel skimmers, No. 180.
2 retinned hotel forks, 20 and 24-inch, Nos. 200-240.
1 retinned cake turner, No. 150.
24 retinned forged basting spoon, Nos. 12-14-16-18.
2 Chinese strainers, Nos. 75-90.
2 French strainers.
2 hotel colanders, long foot, 9-13 inches.
2 18-inch hotel potato friers with wire basket.
6 extra heavy tin dish pans, 2½ gallons.
6 extra heavy tin dish pans, 3½ gallons.
8 ribbed oven pans full size of oven, 22-gauge black steel.
16 ribbed oven pans full size of oven, 22-gauge black steel.
1 extra heavy tin grease strainer, long handle, 14-5 inches.
2 spice boxes, 6 compt., with handle.
6 retinned flat skimmers, Nos. 12-15.
12 retinned plain ladles, Nos. 9-12.
6 retinned pierced ladles, No. 12.
2 flour sieves, wood frame, 16-inch.
6 retinned French gravy ladles, No. 6.
6 tin apple corers.
2 hotel graters, iron bound, 9x13-inch.
2 Peerless nutmeg graters.
4 retinned egg whips, 15-18-inch.
2 Dover egg whips, heavy.
2 Surprise egg whips.
2 wire egg whips.
4 skimmers, 5½ and 6½-inch.
6 hotel pot chains.
2 wire broilers, 10x14½, No. 23.
2 wire broilers, 11x15, No. 24.
2 wire broilers, 12½x16½, No. 25.
1 Sterling bread slicer, No. 50B.
2 24-inch wood chopping bowls.
2 double mincing knives.
2 maple rolling pins, 23x3 inches.
2 maple potato mashers, 17x5 inches.
6 maple wood spoons, 13-inch, No. 2.
6 maple wood spoons, 15-inch, No. 3.
6 maple wood spoons, 18-inch, No. 4.
6 maple wood spoons, 22-inch, No. 5.
1 rapid lemon squeezer.
6 butcher knives, 8-10-12-inch.
2 boning knives, 6-incb.
1 splitting knife.
1 ham slicer, 10-inch.
8 cook's knives, 6-8-10-12-inch.
6 spatulas, 6-8-12-14 inch.
3 carving forks, No. 67544.
1 pot fork.
6 short handled kitchen forks.
12 vegetable knives.
12 Champion vegetable peelers.
2 meat saws, 24-inch.
2 butcher cleavers, 8-10-inch.
1 lamb cleaver, 9-inch.
2 broiling forks, 12½-inch.
10 French fry pans, Nos. 20-24-28-32-36.
1 grease can, 12-gallon.
1 Clinton vegetable slicing machine with grater.
1 Joseph universal cocoanut grater.
3 compartment fireless cooker, No. 4, duplex.
1 wooden table, iron-pipe legs on casters, same height as range.
6 sugar barrels, with metal covers.
6 sugar ½ barrels with metal covers.
12 high stools with backs.
1 Kent knife cleaner.
1 bottle washer.
1 ash sifter.
12 soap trays.
1 pantry ladder.
3 pair ice tongs.
6 ice awls.
1 hanging scale, 2 oz. to 60 lbs., for weighing garbage.
1 potato peeler, Sterling No. 20, with motor.
1 Bonanza apple peeler and corer.
1 Lee bread crumber No. 30, for power.
2 Peerless ice cream freezers, 12-quart, coil refrigeration with motor, with ice crusher, buffer and grindstone attachments.
1 Grant butter cutter.
1 coffee mill, Universal, for power.
2 berry washers, wire.
1 salad washer, No. 3.
1 Buffalo meat chopper, No. 18.
2 hardwood salt boxes, 1-quart.
2 cutting boards, No. 3.
1 batter kettle.
6 wash basins No. 1300, Puritan.
4 egg slicers.
4 flour cans, 25-lb. capacity.
4 sugar cans, 10-lb. capacity.
6 japanned match boxes.
1 sure-cut can opener.
2 corkscrews.
1 grapefruit knife.
1 set skewers, 4-12 inch polished steel.
1 set larding needles.
1 butcher's steel, 12-inch.
2 Guernsey mixing bowls, 15-inch diameter.
2 Guernsey mixing bowls, 11-inch diameter.
1 set waffle iron, 6 pans, No. 12.
12 galvanized iron pails, 12-quart.
12 border molds, round and oval.
12 jelly molds, round and oval.
12 long-handled dust pans.
1 rapid lemon squeezer.
12 10 to 1 quart Gilchrist ice cream dishers for serving vegetables, etc.
12 brown earthenware bean pots, 1-gallon.
1 block scraper.
1 ice cream can scraper.
1 palette knife, No. 927.
1 potato eyer.
1 U. S. slicing machine with pedestal.
4 heavy tin glass carriers.
12 dish tote boxes, 30x18x4 inches, to fit wagons.
2 fry baskets, 8-inch.
3 flour dredges, No. 2 Kreamer.
3 flour dredges, No. 1 Kreamer.
24 retinned table and tea spoons.
72 ladles, No. 360.
144 brushes for dishwashing, "Keep Clean."
3 No. 40 Duplex fircless cookers.
1 Ferain mechanical can opener.
36 cheese molds.

Aluminum ware for main kitchen:

1 stock pot with faucet and strainer, 25-gallon cap., No. 840.
1 sauce pot with loop handles, 60-quart cap., No. 656.
1 deep stock pot, loop handles, 40-quart cap., No. 814.
1 deep stock pot, loop handles, 25-quart cap., No. 812.
2 stock pots, with loop handles and covers (shallow), 8½-quart cap., No. 710.
2 sauce pans, with loop handles, without covers, 6½-quart cap., No. 549.
2 sauce pans, with loop handles, without covers, 4½-quart cap., No. 548.
2 sauce pans, with loop handles, without covers, 2½-quart cap., No. 707.
3 sauce pans with long handles, 8-10 quart cap., No. 505.
2 sauce pans with long and bail handles, 5-quart cap., No. 440.
2 sauce pans with long handles and a loop, 15-quart cap., No. 444.
2-round braisers, 3½-quart, cap., No. 489.
2 cruller pans, 8½-quart cap., No. 770.
2 fry baskets for above, 8-inch diameter.
1 circular rack, No. 840R, 20-inch diameter (for inside kettles).
2 circular racks, No. 832R, 12-inch diameter (for inside kettles).
2 double boilers, No. 919, 8½-quart cap.
2 double boilers, No. 920, 11-quart cap.
1 double boiler, No. 917, 4-quart cap.
2 double boilers, No. 922, 17½-quart cap.
2 heavy frying pans, No. 414, top diameter 14 inches.
2 colanders, 11½x5 inches, 3½-quart.
1 dozen griddle cake covers, 6-inch diameter, No. 200.
1½ dozen drip pans, 18½x12½-inch top measure, No. 315.
1½ dozen drip pans, 14½x10½-inch top measure, No. 312.
2 asparagus cookers, No. 323, 7½-quart cap.
2 funnels, 2½-pint cap., No. 305.
4 fruit funnels, No. 306, 2¾-pint cap.
6 measuring cups, No. 180, ½-pint cap.
1½ dozen baking pans, No. 246, 23½x13¾.
1½ dozen baking pans, No. 245, 18¾x12¾.
1½ dozen deep pudding pans, No. 82, 2-quart cap (these to be sent to wards).
1 set measures, 1 pint to 4 quarts, Nos. 191, 192, 193, 194, 195.
2 soup strainers, No. 914, 2-quart cap.
3 heavy dredges for flour, 5x4½ inches.
3 heavy dredges for sugar, 5x3½ inches.
2 tea kettles, 2-gallon cap.
6 No. 891 pint bowls, 1-quart, 4⅝x2¾x2¾ inches.
6 shallow bowls, No. 292, capacity 1 quart.
8 deep bowls, No. 293.
6 flat plates, No. 895, 8¾x7⅞ inches.
6 straight cups, capacity 1 pint, No. 210.
6 cast ladles, No. 360.
1 sponge or egg kettle, 24-quart cap., No. 870.
1 sponge or egg kettle, 30-quart cap., No. 871.
1 sponge or egg kettle, 11-quart cap., No. 867.
For delivery to wards:
17 coffee bottles, 6-quart cap.
8 coffee bottles, 2-quart cap.
10 coffee bottles, 1-quart cap.
17 bottles for carrying hot milk, 1-gallon cap.
18 bottles for carrying hot milk, 1-quart cap.
6 dozen trays, 21x15 inches, No. 349.

List of utensils for bakeshop of Cincinnati General Hospital:

1 Hunter flour sifter, No. 12.
1 wood double frame flour sieve, copper wire, 14-inch.
1 wood double frame flour sieve, copper wire, 16-inch.
1 wood double frame sugar sieve, copper wire, 14-inch.
1 sugar dredge, No. 1 Kreamer.
1 flour dredge, No. 2 Kreamer.
24 muffin cards, 6-hole, No. 120 Puritan.
1 iron-bound hotel grater, 9x13-inch.
1 Peerless nutmeg grater.
1 bakehouse scale, tin scoop, ¼-oz. to 8-lb.
2 retinned egg whip, 15-inch.
2 wire skimmers, 5½, 6½-inch.
1 double lip custard dipper, No. 1.
4 bakers' flour brushes.
12 Rubberset pastry brushes, 2-inch.
2 maple rolling pins, 3½-inch.
1 potato masher, 4-inch, maple.
2 dough scrapers.
4 wood paddles, 12½, 15-inch.
2 wood spoons, 18, 22-inch.
1 Rapid lemon squeezer.
3 bakers' peel and pole, 6, 8, 10-inch.
1 steel biscuit brake.
1 Triumph cake mixer with motor.
1 marble top table, 6x2½ feet (4-foot marble).
2 butcher knives, 8, 10-inch.
3 cook's knives, 8, 10, 12-inch.
4 pallet knives, 6, 8-inch.
3 pallet knives, 10, 12, 14-inch.
3 vegetable knives.
1 butcher's steel, 14-inch.
1 mixing bowl, wood, 24-inch.
4 white earthen mixing bowls, 15, 17-inch.
24 12x4½-inch, 6X tin pans (Pullman).
12 bakers' sheets, 18x24x1-inch, open one end.
12 Russia iron roll pans, 6 tubes each.
1 cruller pan with wire basket, No. 1180.
5 4X tin pan, 14, 17, 21, 30, 40-quart.
1 seamless colander, No. 217.
1 Chinese strainer, No. 75.
1 French wire strainer.
1 retinned plain ladle, No. 100.
2 cake turners, No. 160.
8 retinned basting spoons, 10, 12, 14, 16-inch.
18 pudding pans, 6X tin, 10-quart, No. 160, Puritan.
4 flat skimmers, Nos. 14 and 15.
6 plain ladles, Nos. 9, 12 and 13.
2 French gravy ladles, No. 6.
3 biscuit cutters, 2-inch.
3 doughnut cutters, 2½-inch.

Aluminum for bakeshop:

3 only tin biscuit cutters, 2-inch diameter.
3 only doughnut cutters, 2½-inch diameter.
3 dozen baking pans, 23⅛x13¾, No. 247.
2 dozen brown bread cans, 4½x3½x4¾, No. 111.
10 dozen bread pans, 18½x5¾x2⅜, No. 101.
2 dozen corn cake pans, 3x3¾ (12 to card), No. 102.
2 dozen muffin pans, 2-inch (12 to card), No. 166.
1 sponge or egg kettle, 24-quart capacity, No. 877.
1 sponge or egg kettle, 16-quart capacity, No. 869.
1 candy kettle, 6½-gallon capacity, No. 666.
2 ladles, 12⅜-inch handle, No. 360.
1 sauce pan, 2½-quart capacity, No. 507.
2 sauce pans, 6½-quart capacity, No. 509.
1 sauce pan, 11-quart capacity, No. 629.
1 sauce pan, 15-quart capacity, No. 650.
1 sauce pan lid, 7-inch inside diameter, No. 587.
2 sauce pan lids, 9-inch inside diameter, No. 589.
1 sauce pan lid, 10-inch inside diameter, No. 590.
1½ dozen dairy pans, 5-quart capacity, No. 398.
1½ dozen deep pudding pans, 5-quart capacity, No. 85.
1½ dozen deep pudding pans, 3-quart capacity, No. 83.
5 dozen deep pie plates, 10x1⅛-inch, No. 284.
3 dozen straight cake pans, 9⅛x1⅛-inch, No. 287.
2 dozen tubed cake pans, 9¾x4-inch, No. 93.
1 dozen turban cake molds, 9⅛x3⅞-inch, No. 108.
1 set aluminum measures, Nos. 194, 195, 192, 193, 194.
3 aluminum measures, ½-pint, No. 180.
2 funnels, Nos. 305, 306.
12 dozen timbale molds.

List of utensils in milk kitchen in children's ward of the Cincinnati General Hospital:

1 Babcock separator.
1 glass funnel.
1 mortar and pestle.
1 Harvard trip scale.
1 rack for distilled water.
12 glass containers for flour and sugar, etc.
3 graduate glasses.
3 glass funnels.
1 Arnold sterilizer.
1 electric hot plate.
1 refrigerator.
1 case for filing formulas.
1 can for cotton.
1 gross 3-oz. infant bottles.
1 gross 6-oz. infant bottles.
1 gross 8-oz. infant bottles.
1 gross 10-oz. infant bottles.
1 scale for weighing baby.
2 Chapin dippers.
2 gross nipples.
1 glass front cupboard.

Aluminum ware—milk kitchen—children's ward:

6 pitchers, 2½-quart capacity, No. 405.
1 tea kettle, 7½-quart capacity, No. 118.
1 aluminum kettle with lid, 2½-quart capacity, No. 707.
1 aluminum kettle, 4½-quart, No. 708.
1 aluminum kettle with lid, 6½-quart, No. 709.
2 pots, 15-quart each, No. 810.
1 double boiler, 17½-quart, No. 922.
2 double boilers, 1-gallon, No. 917.
2 double boilers, 7-quart, No. 918.
2 double boilers, 1-quart, No. 940.
6 measuring cups, No. 180.

List of utensils for kitchen of Nurses' Home, Cincinnati General Hospital:

1 fireless cooker, Duplex, No. 40.
1 retinned plain ladle, No. 100.
1 retinned plain ladle, No. 200.
1 retinned pierced ladle, No. 100.
1 retinned pierced ladle, No. 200.
1 retinned hotel flesh fork, 20-inch, No. 200.
2 hotel cake turners, No. 160.
2 retinned basting spoons, 10-inch.
2 retinned basting spoons, 12-inch.
2 retinned basting spoons, 14-inch.
1 Chinese strainer, No. 75.
1 hotel French strainer, No. 60.
1 hotel French strainer, No. 60, coarse.
1 hotel colander, 9x13-inch, short foot.
4 extra heavy 6X tin dishpans, 10-quart.
2 extra heavy 6X tin dishpans, 14-quart.
4 French fry pans, 24-inch.
4 French fry pans, 28-inch.
4 French fry pans, 32-inch.
2 strapped roast pans, full size of oven.
4 strapped roast pans, half size of oven.
6 bakers' sheets steel, 18x24x1, open one end.
6 deep putting pans, 5-quart.
1 six compartment round spice box with handle.
2 Columbia flour sifters.
1 Bonanza apple corer and parer.
2 tin apple corers.
1 sugar dredge, 4X tin, No. 1.
1 flour dredge, 4X tin, No. 2.
2 tea strainers, No. 2.
1 hotel grater, iron bound, 9x13-inch.
1 Peerless nutmeg grater.
1 Lightning cocoanut shredder.
1 bake house scale with scoop, ¼ oz. to 8 lbs.
1 flat skimmer, No. 12.
1 flat skimmer, No. 13.
1 retinned plain ladle, No. 9.
1 retinned plain ladle, No. 12.
1 retinned pierced ladle, No. 12.
1 Clinton vegetable slicer with grater attachment.
1 Universal meat chopper, No. 3.
2 ice picks.
1 pair ice tongs.
2 retinned egg whips, 15-inch.
2 Surprise egg whips.
2 Dover egg whips, large and small sizes.
1 salad washer, 10-inch.
1 berry washer, 10-inch.
2 hotel pot chains.
2 wire toasters, 10x17-inch, No. 24.
2 wire broilers, 11x14½, No. 23.
1 pure sieve, brass wire, tin frame, 16-inch, with brush.
1 extra strong vegetable press, No. 2.
1 wood chopping bowl, 14-inch.
1 double mincing knife.
2 retinned grocery scoops for flour, No. 2.
2 retinned grocery scoops for sugar, No. 2.
1 retinned thumb scoop for tea, No. 12.
2 maple rolling pins, 3½-inch.
3 glass lemon reamers.
3 garbage cans, No. 8.
1 wooden table, pipe iron legs on casters, same height as range.
1 pantry ladder.
1 hanging wall scale, 2 oz. to 60 lbs.
2 water pails, No. 212, Puritan.
1 hardwood salt box, 1-pint.
2 cutting boards, No. 2.
1 batter kettle, No. 1.
2 agate wash basins, No. 28.
4 egg slicers.
6 match boxes.
2 can openers, sure cut (patent).
2 corkscrews.
2 grapefruit knives.
1 set skewers.
1 set larding needles.
6 Guernsey mixing bowls, No. 5.
1 waffle iron, 6-cake.
1 timbale iron, round.
1 Syllabub churn, 12-inch.
12 hanging soap trays.
1 bread box, No. 4, Fries.
1 cake box, No. 4, Fries.
1 cracker box, 10x5-inch, No. 2, Fries.
1 cheese box, No. 1, Fries.
1 butter quirl.
1 steak tong.
1 marble pastry table, 6 ft. x 30-inch (4-foot marble).
4 cake and pudding sticks, 9, 10, 11, 12-inch each.
1 pine knife box.
1 range scraper.
4 mixing bowls, Guernsey, No. 6.
1 set vegetable cutters, 12 pieces.
3 biscuit cutters, 2-inch diameter.
3 jumble cutters, 2½-inch.
1 pastry jagger.
1 bean slicing machine, No. 3588, 9-blade.
5 palette knives, 6, 8, 10, 12, 14-inch.
6 border molds, oval.
6 savarin molds, rounded, 4-inch.
1 croquette mold, round.
1 confectioner's thermometer.
1 mayonnaise mixer, No. 24, Christy.
1 Chandler ice breaker, No. 2.
6 wood spoons, 13-15-22-inch.
3 butcher knives, 8-10-12-inch.
1 ripping knife, 6-inch.
1 boning knife, 6-inch.
1 beef slicing knife, 12-inch.
4 cook's knives, 6-8-10-12-inch.
1 butcher's steel, 14-inch.
1 heavy carving fork, 7-inch.
6 kitchen forks, long handle.
6 vegetable knives.
1 cleaver, 8-inch.
1 butcher's saw, 24-inch.
2 glass carriers, heavy tin.
6 earthenware bean pots, 1-gallon.
6 10 to 1 quart Gilchrist ice cream dishers for serving vegetables.
1 ice cream can scraper.
1 chopping machine.
2 wooden bowls, 14-inch.
2 dish wagons.
12 retinned table spoons.
12 retinned tea spoons.
1 sanitary meat slicer.
1 Triumph beating machine.

Aluminum ware for Nurses' Home kitchen:

1 colander, 11⅛x5 inches, cap. 3¼ quarts.
1 11-quart cap. sponge or egg kettle, No. 867.
1 13-quart cap. sponge or egg kettle, No. 868.
1 14-inch potato frier with wire basket, No. 775 (cruller pan).
2 heavy household fry pans, 11⅛-inch diameter, No. 457.
6 baking pans, 23⅛x13¾x2, No. 246.
2 heavy fry pans, 14-inch diameter, No. 414.
1 heavy fry pan, 8-inch diameter, No. 408.
6 baking pans, 18¾x12¾x2-inch, No. 245.
½ dozen pudding pans, 2-quart capacity, No. 85.
1 dozen pudding pans, 3-quart capacity, No. 73.
½ dozen pudding pans, 1-quart capacity, No. 80.
1 dozen dairy pans, 5-quart capacity, No. 398.
1 dozen mountain cake pans, 9⅛x1½, No. 90.
1 dozen shallow cake pans, 12x8-inch, No. 99.
½ dozen square jelly cake pans, 9⅜x8⅜, No. 96.
3 deep pie plates, 10x7⅝-inch, No. 284.
1 dozen straight cake pans, 8x1¼, No. 286.
½ dozen tubed cake pans, 9¾x8, No. 93.
2 only oval jelly mold, 7⅝x5⅝, No. 110.
12 dozen timbale molds, 2-inch diameter top.
2 dozen griddle cake covers, 6-inch diameter, No. 200.
2 asparagus cookers, 7½-quart capacity, No. 323.
1 set measures, ½-pint to 4-quart (Nos. 190, 191, 192, 193, 194, 195).
6 ½-pint measuring cups, No. 180.
1 set funnels (Nos. 302, 303, 304, 305, 306).
2 tea kettles, 7½-quart capacity, No. 118.
1 dozen brown bread pots, 4¼-inch diameter, No. 111.
1 only soup strainer, 1-quart capacity, No. 912.
1 only soup strainer, 2-quart capacity, No. 914.
½ dozen pint bowls, 1-quart capacity, No. 891.
½ dozen shallow bowls, 1-quart capacity, No. 292.
½ dozen deep bowls, 1-quart capacity, No. 293.
1 only double boiler, 4-quart capacity, No. 917; 1 only 11-quart capacity.
1 only double boiler, 8½-inch capacity, No. 919; 1 only 17½-quart capacity.
1 deep stock pot with spigot, strainer and cover, 60-quart capacity, No. 856.
1 saute pot with loop handle, 8½-quart capacity, No. 472.
1 saute pot with long handle, 5-quart capacity, No. 440.
1 saute pot with long handle, 3½-quart capacity, No. 439.
1 sauce pot, 2½-quart capacity, No. 547.
1 sauce pot, 4½-quart capacity, No. 548.
1 sauce pot, 6½-quart capacity, No. 549.
1 sauce pot, 8½-quart capacity, No. 550.
1 shallow stock pot, 14-quart capacity, No. 712.
1 loop-handled cover for saute pot, 12-inch diameter, No. 592.
1 loop-handled cover for saute pot, 7-inch diameter, No. 587.
1 loop-handled cover for saute pot, 8-inch diameter, No. 588.
1 loop-handled cover for saute pot, 9-inch diameter, No. 589.
1 loop-handled cover for saute pot, 10-inch diameter, No. 590.
1 circular rack for inside of kettle.
1 circular rack.
1 cast oblong griddle, 23⅝x12, No. 389.
3 dozen trays, 15x21-inch, No. 349.
1 dozen trays, 15⅜x11⅛-inch, No. 347.

List of utensils for small candy kitchen and roof of Nurses' Home:

3 tea pots, 1-quart capacity, of brown earthenware.
3 toasters, 10x17 inches, wire.
3 wooden spoons, 8-inch.
3 paring knives.
3 bread knives.
3 butcher knives.
3 spatulas, 6-inch.
3 kitchen forks.
3 small strainers.
3 compartment spice boxes.
3 glass lemon reamers.
3 "Dover" egg beaters.
3 "Daisy" egg whips.
3 garbage pails, "Witt," 1½-gallon capacity.
3 sets of containers, marked cake, bread, flour, salt, tea, coffee, soda.
6 vinegar cruets.
3 pitchers, white enamel, 2-quart capacity.

3 mixing bowls, Guernsey No. 4.
3 confectioners' thermometers.
3 aluminum tea kettles, 5-quart capacity, No. 116.
3 aluminum double boilers, 1-quart capacity, No. 140.
3 aluminum stew pans, 4½-quart capacity, No. 508.
3 aluminum coffee pots, lat. capacity No. 30.
3 aluminum stew pans, 8-10-qt. capacity, No. 505.
6 aluminum trays, 11⅝x9⅜-inch, No. 261.
3 aluminum fry pans, 7-inch diameter, No. 407.
6 aluminum measuring cups, ½-pint capacity, No. 180.
12 aluminum flat plates, 8¾-pint, No. 895.
12 aluminum shallow cake pans, for cooling candy, 12x8 inches, No. 99.

Steel in Specifications

It is becoming a favorite practice in making specifications to specify some particular brand of steel. Some steel company starts an advertising campaign of its products, goes to every manufacturer of kitchen equipment, and offers to put his name in its advertisements provided the equipment manufacturer will state in his literature that he uses this particular brand of steel. The architect drawing the specifications which he often obtains from the manufacturer, names this steel in his specifications. This, of course, gives the advantage to the equipment maker who has the steel in stock, while those manufacturers who habitually use a different brand of equally good quality have to figure on buying a small quantity at higher prices, or to insert in their specifications the name of another brand, which is naturally taken by the uninitiated to be "something different" from that specified and consequently open to suspicion.

If a special brand is mentioned, the words "or equal" should be used with it, thus avoiding this difficulty; and if the gauge is specified one is sure of getting the quality wanted, without favoring any particular equipment or steel manufacturer.

Tables in the Kitchen

Wherever possible steel table tops should be used, and in all cases iron pipe legs and metal undershelves are essential to sanitary conditions.

THE COOK'S TABLE

The cook's table should always be of all-steel construction, and where chopping or cutting is necessary wood cutting boards should be used to protect the knives.

As these cutting boards raise the height of the table above that which cooks are accustomed to, it is advisable to reduce the height of the steel table to 32 inches, instead of the 34 inches usually specified for wooden tables on which the use of a cutting board is not necessary.

A good specification form for a cook's table of steel is:

A table — feet long and — inches wide, the top to be of No. 10 gauge (U. S. standard) steel (or if the table is less than 36 inches wide, of No. 12 steel). The top to be perfectly level, ground and polished, with edges rounded, and to be riveted to a 2x2x¼-inch angle-iron frame with outside face ground and polished to a smooth surface. This top to be mounted on half-inch iron-pipe legs fastened by means of floor flanges and having ball feet. The legs to be cross-braced with angle iron and to have a 14-gauge galvanized iron sectional shelf 10 inches above the floor. (The span between the legs should never exceed 8 feet.) The table to have — drawers, 24x30x8 inches, constructed of 14-gauge galvanized iron, with brass drawer pulls, and hung on polished angle-iron slides. (When drawers less than 24 inches wide are used, 16-gauge iron is heavy enough.)

It is convenient to place a sink about 20x20x12 inches in size in the cook's table, and this sink should not be constructed of material lighter than 14-gauge galvanized iron or 32-ounce copper.

Occasionally a bain marie is placed in the table, and sometimes a steam table is included, but it will be found, in all except some special cases, that it is better to have these constructed as a separate fixture.

CLEAN-DISH TABLES

While it is possible to make these of metal, the risk of breakage is greater and the fact that a clean, white dish will invariably contract marks from a metal table when moved on the metal surface, suggests that the best practice is to have the clean-dish table constructed of well-seasoned hard maple, coated with one or two coats of linseed oil, which makes the table impervious to moisture. The table should be about 1¾ inches thick and with two one-inch shelves above it; the table to be mounted on iron-pipe legs and the shelves on iron-pipe standards.

The clean-dish table need not have as large an area as the scrap table, because the stacked dishes do not occupy as much space as the loosely piled up soiled dishes. It is a common mistake of designers to make them the same size.

FISH TABLE

If a fish table is desired it should not be of wood covered with metal, but of marble, slate or steel, the last being the most practical, economical and sanitary. This table should always have a splash board or curb at least twelve inches high around the back and two ends, and should have a small sink fitted in it.

PASTRY TABLES

These tables should be of ash or poplar, 1¾ inches thick with 4-inch curb at back and two ends; one-half of top should be covered by a flat marble slab one inch thick, and the whole mounted on iron-pipe legs, properly braced, with galvanized sectional undershelf 10 inches from floor. The table should have a metal drawer 24x30x8 inches, with angle-iron slides; the drawer to be subdivided into compartments.

PREPARING OR WORK TABLE

These tables, to attain the best sanitary results, should be constructed under the same specifications as the cook's tables; but if a less expensive type of table is desired the tops can be constructed of 1¾-inch kiln-dried maple, mounted on iron-pipe legs and provided with tool drawers constructed of 14-gauge metal; drawers are not usually specified, but should be, as their absence causes great inconvenience for the reason that there is no place for the storage of knives and other tools.

According to the annual report of the New York State Hospital Commission it now costs the state over six million dollars a year for the maintenance of its insane population, and last year nearly half a million was expended on new buildings for them. The number of insane persons has increased 123 percent in the last twenty-four years, while the population of the state has increased only 65 percent. Nearly 35,000 insane are being cared for in the state institutions and 27 percent of them are aliens.

Club women, physicians and settlement workers in New York City have become interested in a project to provide small hospitals on the roofs of apartment buildings for the class of families from the homes of which wage earning necessities take most or all of the members daily, and for other persons where living conditions are cramped. The plan is to induce landlords to permit the use of the roofs and to erect thereon hospitals of five or six rooms, with bath, kitchen and sun parlor. A nurse would be engaged and the rooms rented for a small sum per week. These hospitals are designed only for cases of ordinary illness, the main purpose being to make it possible for the patient to enjoy fresh air and quiet with some nursing attention. It is understood that the project has the indorsement of the board of health.

AMERICAN HOSPITAL ASSOCIATION

Everybody Urged to Attend the Convention

Fellow Members of the American Hospital Association:

The next meeting of the American Hospital Association will be held at San Francisco, June 22, 23, 24, 25, 1915.

The American Medical Association meets at the same time.

Doubtless there will be the largest number of hospital workers ever assembled.

Can you afford to miss this opportunity of hearing topics of vital interest to institution officials discussed from every angle in the most practical way by the ablest hospital administrators?

The president is preparing a program, which will be one of the most practical ever presented to a hospital association.

Mr. Bacon is again making arrangements for a special train to convey the members from Chicago to the San Francisco convention.

The transactions of the St. Paul convention are about completed. This report contains about 600 pages of the most practical matter pertaining to institutions ever published. Each member will receive a copy at an early date.

H. A. Boyce, Secretary.

The Second Call to the Land of Sunshine and Flowers

The American Hospital Association will meet at the Hotel Inside Inn, in the City of San Francisco, June 22, 23, 24, 25, 1915.

This is your opportunity to attend the greatest convention of hospital workers in the world. You will derive much benefit by taking part in the discussions of the papers at the meetings of the Association. You will also be privileged to mingle with hospital workers from the north, east, south and west. Difficulties which have been perplexing you for some time may be solved by a few minutes' conversation with some of the hospital superintendents.

For the benefit of the members, a special train will be run from Chicago to San Francisco. The fare will be about $60.00. Better write Mr. Bacon, Superintendent Presbyterian Hospital, Chicago, Ill., for your reservation.

The president is putting forth every effort to make the program this year one of the best ever presented.

Hospital architecture, training school problems, housekeeping and dietetics will be discussed at this convention. In fact every phase of institution work will be fully covered.

In order to take advantage of this great opportunity you must be a member of this mighty organization.

Boards of trustees are choosing their superintendents and superintendents of nurses from among its members.

It will be to your advantage to become a member of the American Hospital Association today. Why not send your name to the undersigned now?

There are over 7,500 hospitals of all classes in the United States and Canada. The membership of the Association is about 1,100. This means that a great majority of hospital superintendents are not connected with this organization.

The Transactions of the St. Paul Convention are completed. A glance at this report shows that a greater part of the discussions took place in the Small Hospitals Section.

One of the special features of this year's meeting will be the non-commercial exhibit. It is to be hoped that every hospital will contribute toward making this exhibit a real success by forwarding any article which they have found useful to Miss Lydia H. Keller, R. N., Chairman, Northfield, Minnesota. Let everybody contribute something today.

Do not forget, if you are not a member, to send your application to the secretary today. The fee for active members is $5.00. The fee for associate members is $2.00. The initiation fee is $5.00. This includes the first year's dues.

The Association needs you today; you may need it tomorrow.

INFORMATION ABOUT THE CONVENTION

For the benefit of the readers of The Modern Hospital, many of whom are members of the American Hospital Association, I desire to present certain facts which will be of interest to those who are thinking of attending the convention in San Francisco next June.

ROUTES AND RATES

The delegates to San Francisco in 1915 will have a choice of routes that will give for sightseeing and study a range never before presented in the history of expositions. Any one of the many rail lines leading west may be used. There will also be a route by steamship from Atlantic coast and gulf ports direct to San Francisco through the Panama Canal. In general, the delegate may reach the Exposition City via Los Angeles; via El Paso and Los Angeles, Albuquerque direct or via Los Angeles; or via Spokane, Seattle, Portland, Vancouver, Victoria or Prince Rupert.

The following round-trip rates have been announced:

From Denver and common points to San Francisco and return	$45.00
From Omaha, St. Joseph, Atchison, Kansas City and common points to San Francisco and return	50.00
From St. Louis, Memphis, New Orleans and common points to San Francisco and return	57.50
From Chicago and common points to San Francisco and return	62.50
From Pittsburgh and common points to San Francisco and return	81.20
From Buffalo and common points to San Francisco and return	83.50
From Detroit and common points to San Francisco and return	73.50
From Cincinnati and common points to San Francisco and return	71.10
From Cleveland and common points to San Francisco and return	76.20
From New York and common points to San Francisco and return	94.30
From Philadelphia and common points to San Francisco and return	92.95
From Washington and common points to San Francisco and return	92.30

All tickets are good via any direct line, returning via the same or any other direct line. Tickets from Chicago, St. Louis and similar territory are good via New Orleans, returning via same or any other direct route. All rates apply via Los Angeles. Round-trip tickets going or returning via Canadian or northern lines through Prince Ru-

pert, Victoria, Vancouver, Seattle or Portland; Shasta Route (rail) or steamship between these points and San Francisco, $17.50 higher, except that tickets via Prince Rupert are $27.50 higher, which includes berth and meals on steamer Prince Rupert to Seattle. Usual stop-over privileges will be allowed on both going and return trip.

Tickets will be on sale March 1st to December 1st, 1915, good for ninety days from date of sale, except that final return limit on all tickets sold at above rates will be December 15, 1915.

The sleeping car rates can readily be determined on inquiry at starting points. Two classes of sleeping cars are operated into San Francisco from the east, known as standard and tourist service. The rates in the tourist cars are one-half of the rates in the standard sleepers.

Special excursion rates by both rail and water will be in effect during the whole of the Exposition period from San Francisco points of interest throughout the Pacific coast.

VIA PANAMA CANAL

Rates will be in effect and excursions will be run during the Exposition period, taking the traveler through the canal on going trip and returning by rail, or vice versa, from Atlantic coast and Gulf ports to San Francisco. Steamship service will also be maintained from South American and European ports to San Francisco via the canal. Travelers via this route will be able to make a study of the canal, the completion of which the Panama-Pacific International Exposition celebrates.

HOTEL ACCOMMODATIONS

San Francisco will provide ample hotel accommodations in 1915 and at reasonable rates. A census just completed by the San Francisco Chamber of Commerce shows 2,023 hotels and apartment and rooming houses in the city, an increase of 786, or about 64 percent in three years. Besides the hotel dining rooms and grills, the Chamber of Commerce census shows 767 restaurants and cafes, an increase of 110, or 17 percent during the past year. Of the hotels more than 90 percent are new, with such modern conveniences in every room as the telephone, hot and cold water, steam heat and electric lights. Among the great hotels that rank with the best in New York or London are the new Palace, with 700 rooms; the Fairmont, with 500 rooms; and the St. Francis, with 750 rooms. An additional wing now being added to the St. Francis will provide a total of about 1,000 rooms by 1915.

HOTEL RESERVATIONS FOR 1915

The Exposition management has organized a "Bureau of Information and Public Service," the services of which are rendered free. This bureau will undertake to supply information regarding hotels, apartments, boarding houses, and rooms for individuals, parties and conventions. The San Francisco Hotel Association, representing more than four hundred modern hotels, apartment and lodging houses, containing more than 50,000 rooms, has incorporated and established the San Francisco Hotel Bureau, with a capital of $100,000. The Bureau will make contracts for the members of the Association for hotel and other accommodations which may be desired during the Exposition year, and guarantees that all who may so contract will receive just and fair treatment in strict accordance with their agreement. These accommodations, the most modern of any city in the world, will be contracted upon the basis of from one to three dollars per day per person, European plan, and for any date and any length of time desired. The contracting party will be required to give a satisfactory guarantee that the rooms will be used at the time stated in the contract. Arrangements with these hotels may be made through the Exposition "Bureau of Information and Public Service," or directly with the San Francisco Hotel Bureau, No. 702 Market street, San Francisco.

INSIDE INN

A great Exposition Hotel, to be erected on the grounds, will make a specialty of catering to the congresses and conventions that will meet in San Francisco in 1915. Among the convention conveniences will be halls seating from 100 to 1,000 each. Officers of organizations holding sessions in San Francisco in 1915 may contract with the Inside Inn for accommodations for their members at fixed rates and for agreed dates.

The rates per day will be from $1.00 to $10.00 (European plan), according to accommodations. Parties either of women or men may be accommodated at very reasonable rates in rooms containing several beds. In addition to the charge for rooms, a charge of 50 cents will be made for each adult guest, and 25 cents for each child between the ages of 5 and 12 years, for daily admission to the grounds.

The Inside Inn, being within the Exposition grounds, will be subject to the rules and regulations of the Exposition, and no abuses, overcharges, nor anything offensive to the moral sense or good taste will be permitted.

A folder describing the Inside Inn, which has been selected as headquarters of the American Hospital Association, has been mailed to the members of the Association.

SEEING SAN FRANCISCO

A study of reconstructed San Francisco, with its Golden Gate, its splendid harbor, ocean frontage, wharves and shipping, parks, markets, military reservations, old mission, public buildings, unique Chinatown, historic points and nearby resorts will well repay all visiting the Exposition in 1915. The best way to make a comprehensive study of the city is by "Seeing San Francisco" personally conducted trips by street car, tally-ho or automobile, at cost ranging from 75 cents to $1.00 per person.

The "Seeing San Francisco" cars leave the Ferry Building at 10:00 a. m. and 2:00 p. m. daily, making the complete trip in three hours. A stop will be made at the Cliff House to view the Seal Rocks, the beaches and the Golden Gate. Fare for the round trip, 75 cents.

A two and one-half hours' automobile trip, leaving at 10.00 a. m. and 2:00 p. m., gives one a splendid idea of the city, park and beach. Fare for round trip, $1.00.

A most interesting trip is that through Chinatown, visiting the Joss houses, the Chinese theaters, bazaars, curio stores, restaurants, markets, etc.

NEAR SAN FRANCISCO

With San Francisco as the center, a week or more can be well spent, and at small cost, in visiting the cities of Oakland, Alameda and Berkeley, a twenty-minute ride across the Bay, and such nearby points of interest as Stanford University, the University of California at Berkeley, the Mare Island Navy Yard, Mill Valley, Mount Tamalpais, the Muir Redwoods, Piedmont Springs, etc. The following are a few of the points of interest that can be reached from San Francisco, with the round-trip fare in each case:

University of California, at Berkeley	$0.20
Sausalito, by steamer	.25
Mill Valley	.40
San Rafael	.50
Steamer trip around San Francisco Bay	1.00
Mare Island (the United States Navy Yard), by steamer	1.00

The "Portola Discovery Trip" on the Ocean Shore Railroad, leaving San Francisco at 10:00 a. m. and returning at 5:15 p. m..... 1.00
Palo Alto for Stanford University, Sunday excursion, $1.05; two-day excursion..... 1.30
Redwood Canyon, on the Oakland, Antioch and Eastern Railway. Round trip from San Francisco, week days, $0.80; Saturdays and Sundays..... .55
Trip to the base of Mount Diablo by ferry and electric railway. Round trip from San Francisco, week days, $2.10; Saturdays and Sundays..... 1.40
Mount Tamalpais, over "the crookedest railroad in the world," and where a magnificent view of the Pacific Ocean, of San Francisco Bay, with its surrounding hills and mountains and of twenty-five cities can be had..... 1.90
The Muir Woods, via Mount Tamalpais Railway (a grove of virgin redwoods, some nearly three hundred feet high, and within two hours' ride from San Francisco) 1.90
The Mount Tamalpais and Muir Woods trips can be combined in a day's outing for a round-trip fare of. 2.90

The "Key-Trolley Trip," leaving San Francisco at 10:00 a. m. and 1:00 p. m., returning at 4:50 p. m., gives one sixty-eight miles of sight-seeing, visiting the University of California, the Greek Theater, the cities of Berkeley, Alameda and Oakland, Piedmont Gardens and Springs, and the Ostrich Farm. Fare for the round trip, including guide and admission to the attractions, $1.00.

AN OUTING

"How can we combine, at reasonable cost, an outing on the Pacific coast with seeing the Exposition and with attendance at our 1915 Convention?" is the constant query. After Convention Week and visits to the Exposition, there are dozens of coast and mountain resorts throughout the Pacific coast that can be visited with pleasure and profit. Among the typical regions that will be of special interest are points in the Great Central Valley, the resorts among the redwoods (both north and south of San Francisco), the various groves of big trees, the resorts near Mount Shasta, Lake Tahoe, Yosemite National Park, the Kings and Kern River Canyons, the many coast resorts all the way from Alaska to San Diego, Los Angeles and nearby resorts, and the Great Northwest. The spas of California will be found equal to the best in Europe. An idea of the cost of staying a week in each of these typical areas will be given. Of course the monthly rate would, in all cases, be less.

YOSEMITE NATIONAL PARK

Those reaching San Francisco via the San Joaquin Valley or with return tickets via the San Joaquin Valley lines, can arrange to reach the Yosemite National Park from Merced via the Yosemite Valley Railway, all tickets permitting stop-over privileges at Merced. From Merced the round-trip rate to the park is $18.50. For those not routed via the San Joaquin Valley, the round-trip rate to the Yosemite National Park from San Francisco will be $22.35 for those traveling on day trains, with $2.00 each way added for Pullman for those taking the night train. Camp accommodations in the park can be secured at from $2.50 to $3.00 per day; hotel rates from $3.50 to $5.00 per day. Tents for private camping may be rented at reasonable rates. Trained saddle horses may be hired in the park at from $2.50 to $4.00 per day. Many tourists in the park take the trails on foot, thus eliminating the expense for saddle horses, as well as securing the enjoyment of mountain climbing. Twenty-six miles from the park is the Mariposa Grove of Big Trees. This grove can be reached by stage, the round trip costing $15.00. From El Portal, the terminus of the Yosemite Valley Railway, the Merced Grove of Big Trees may be reached by stage at an expense of not to exceed $7.50.

GRAND CANYON

Those routed via the Santa Fe route will enjoy a week at the Grand Canyon of Arizona. Here travelers may take trail trips, ride in coaches along the rim and camp out below in the canyon's depths. The round-trip rate by rail from Williams on the Santa Fe to the canyon is $7.50. At Bright Angel Camp rooms may be secured at $1.00 per day, with meals at the Harvey Cafe at reasonable rates. The rates at the El Tovar Hotel are from $4.00 per day up. Other points of interest on the line of the Santa Fe are the Cliff Dwellings, the Indian Pueblos, the Petrified Forest and Old Santa Fe.

It will be necessary for members attending the fair to have their reservations at the Inside Inn not later than May 20th. All members of the American Hospital Association representing hospitals are requested to secure, if possible, all models built to scale and photographs, neatly framed, and plans of institutions with which they are connected, and arrange to have them exhibited in their state buildings at the fair. This can be easily arranged for by addressing the State Fair Commissioners in the state in which the hospital is located.

It will be desirable to make arrangements so that these models, plans and photographs can be turned over to some individual as trustee at the end of the fair in order that at some later period they may be used in connection with the establishment of a permanent Hospital Bureau. I would suggest, inasmuch as the fair is here in California, that the University of California Hospital be used as a repository for these plans, etc., until such time as they are required by the Central Hospital Bureau, which will eventually be organized. H. T. SUMMERSGILL.

Philadelphia Presents War Ambulance to Paris

The members of the Emergency Aid Committee in Philadelphia have presented a magnificent Red Cross automobile ambulance to the American Red Cross Hospital in Paris. The vehicle was manufactured by the Autocar Company, near Philadelphia, and is now on its way to Paris. The money with which it was purchased was raised by Mrs. Barclay Warburton. The ambulance is unique in that it contains water tanks, water heating apparatus, drawers and compartments. In fact, it is a traveling hospital, and has room for six wounded men in bunks and eight on chairs.

In order to combat the activities of the anti-vivisectionists in Philadelphia, who have even gone so far as to prosecute scientific experts working in the laboratories of the University of Pennsylvania, there has been formed in that city the Pennsylvania Society for the Protection of Scientific Research. This society will inaugurate an active campaign of publicity and education, and bespeaks the moral and financial support of the whole medical profession. It has established a class of members to be known as contributing members, to include those who contribute ten dollars or more to further the work of the society. The chairman of the committee on membership is Dr. William Pepper, 1811 Spruce street.

The new Millville Hospital at Millville, N. J., has been opened, with Miss Clara M. Collins in charge. The building was erected at a cost of $30,000, one-third of which was donated by Henry A. Dix, head of the firm of Henry A. Dix & Sons, manufacturers, and the rest raised by the town. The new hospital accommodates thirty-two patients. It is built along the most modern lines and the equipment is up to date.

A new institution, known as the Trinity Hospital and Training School, has been opened in Nashville, Tenn. The building occupied is a large residence at Belmont avenue and Division street, formerly the home of Judge Woodward. It has been remodeled and up-to-date equipment has been installed. Dr. R. O. Tucker is president and Dr. Joseph P. Schell secretary of the corporation by which the hospital is to be operated.

THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. IV *April, 1915* No. 4

THE GALLOWAY MEMORIAL HOSPITAL OF NASHVILLE, TENN.

A Group of Three Buildings Designed for Free and Private Patients, Affiliated With Vanderbilt University—A Modern, Fireproof Group, Having All the Essentials for Caring for the Sick and Affording Facilities for Medical Teaching

By REV. A. E. CLEMENT, Secretary-Commissioner, and MR. H. E. HANNAFORD, of Samuel Hannaford & Sons, Architects, Cincinnati

INTRODUCTION BY DR. CLEMENT

THE Galloway Memorial Hospital, located at Nashville, Tenn., had its origin in the necessity, at the heart of the South, for a great scientific plant where the sick might be cared for, the problems of disease solved, and better training provided for medical men.

It took the form of a Protestant hospital, but its friends, realizing the need of locating the responsibility and leadership in order to guarantee success, asked the Methodist Church to take the lead. For this reason, it was organized under the auspices of the Methodist Episcopal Church, South, with the requirement that two-thirds of its Board should be members of this Church. It was named as a memorial for Charles B. Galloway, a bishop of the Southern Methodist Church, and a man whose sympathies and interest in humanity were worldwide. The hospital thus incorporated and controlled, though Methodist in responsibility, will be interdenominational in its service.

Bishop W. R. Lambuth and Dr. J. A. Witherspoon, former President of the American Medical Association, were largely instrumental in inaugurating and perfecting the plans. Rev. A. E. Clement, one of the original trustees, was elected commissioner and has, from the beginning, been guiding its policies. The present officers are: President, P. D. Maddin; Vice-presidents, Bishop W. R. Lambuth and O. E. Brown; Secretary and Commissioner, A. E. Clement; Treasurer, First Savings Bank & Trust Company.

Early in its formation, the promoters realized the advantages to the hospital and to the science of medicine of an affiliation with a medical school. A contract was therefore entered into with Vanderbilt University, which grants its medical department the privilege of the clinic in the charity wards and guarantees to the hospital the best service for its charity patients. The pay wards are open to all physicians and their patients. By this affiliation the Vanderbilt medical laboratories are open to the hospital.

The entire plant, when completed, will represent, in building and equipment, an outlay of $575,000. The first building will be the administration building, and will cost $100,000; the second is planned for pay patients, and will cost $235,000; and the third, for charity patients, will cost $240,000. These three buildings will accommodate some 350 patients, having 200 free beds and 150 private beds. It is understood that the free service will be taken care of by endowment.

DESCRIPTION BY MR. HANNAFORD

The original scheme for Galloway Memorial Hospital contemplated a group of three buildings, as shown, upon the block plan.

The front building is designed to accommodate the administrative officers, staff, resident physicians and interns, and to contain several large suites of rooms for private patients. The second building is intended for private patients, and also contains the operating rooms. The third building is to be used for charity patients, and its cen-

Fig. 1. Galloway Memorial Hospital. Bird's-eye view.

tral wing is to be the service building for the entire group.

As funds were not available to carry out the work for all the buildings planned, it was decided to proceed first with the erection of the second building. In doing this, it was necessary to use a part of the basement for the out-patients, and the rest of the space for kitchen, storage, and similar uses, thus making the one building a complete and self-contained hospital. This arrangement, however, is only temporary, and the building is constructed in such a way that the space thus occupied can be readily put to other uses when the three buildings are finally completed. At the present time, the building is under roof, enclosed and ready for finishing.

In plan, it consists of a central pavilion and two wings, one on the north and one on the south of the central portion. The north wing, above the basement, is given over entirely to private patients. The south wing is divided into wards for charity patients, while the central pavilion contains the offices, operating rooms, and the like.

The basement of the building is entirely out of ground, with the three stories above it. The north wing of the basement contains the general kitchen, with its cold storage rooms and pantries. Here also are the dining rooms for officers, interns, and servants, all conveniently arranged for easy service from the kitchen.. A special diet and training kitchen is also arranged for near the main kitchen. The north part of the basement is thus being temporarily used as a service department for the hospital.

In the basement of the central pavilion is located a large enclosed ambulance porch which opens into a central corridor connecting with the main staircases and elevators. Near this porch,

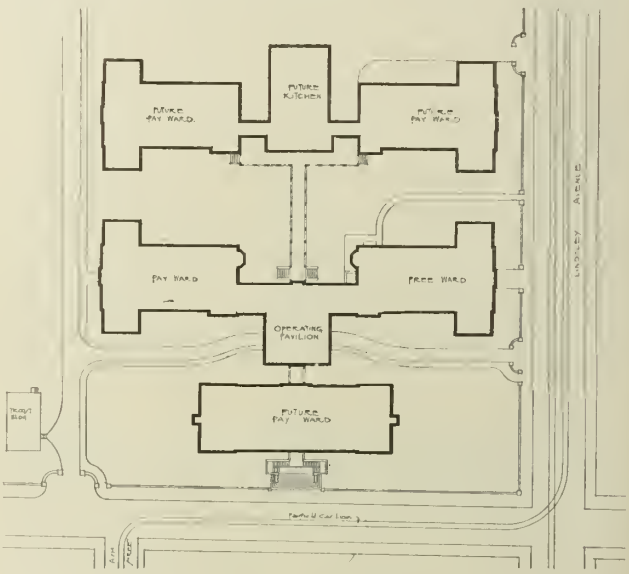


Fig. 2. Galloway Memorial Hospital. Block plan.

the morgue, autopsy room, and so forth, are located, and a portion of this space is taken up by a room containing ventilating fans, vacuum cleaners, and other machinery.

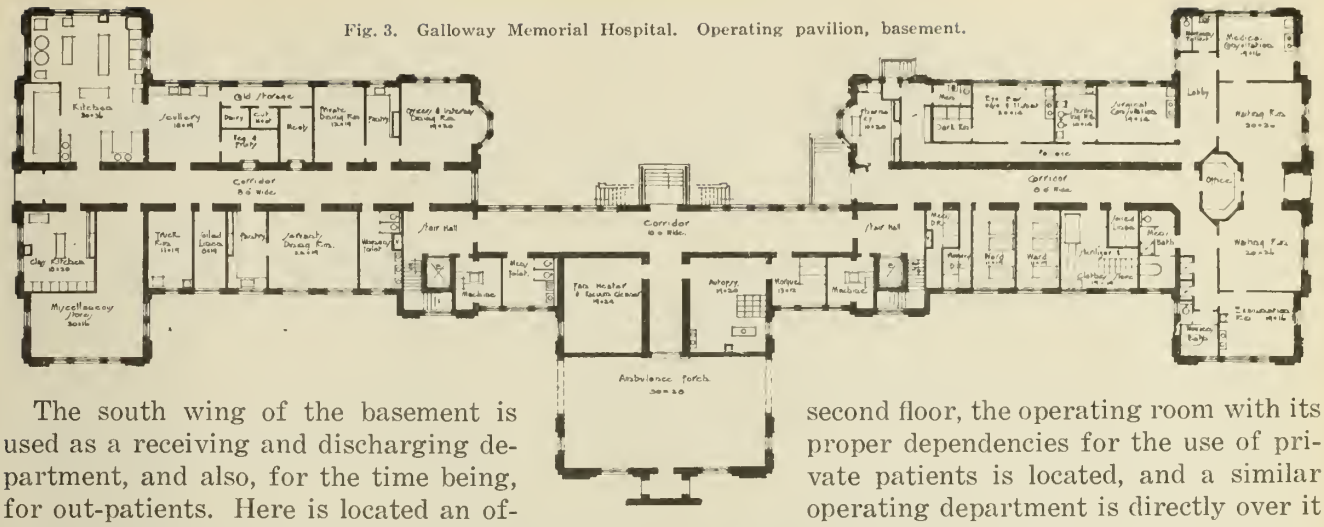


Fig. 3. Galloway Memorial Hospital. Operating pavilion, basement.

The south wing of the basement is used as a receiving and discharging department, and also, for the time being, for out-patients. Here is located an office with waiting rooms for men and women, doctors' examination rooms, special treatment room, bath rooms, the pharmacy, and small detention wards. Arrangements have also been made for the sterilizing of patients' clothing and for its storage.

The first and second floors of north wing are given over entirely to rooms for private patients. Each floor has sixteen of these rooms, or a total of thirty-two rooms, for the accommodation of patients of this class. Diet kitchens, sink rooms, linen, bath and toilet rooms are provided, and are conveniently arranged for the service of this department.

In the south wing, the first and second floors are arranged as wards for the care of charity patients, each floor having two thirteen-bed wards, two six-bed wards, two three-bed wards and one two-bed ward, making the total number of beds for both floors ninety-two. On each floor, there is a kitchen, sink room, treatment room, linen room, and so forth, with a liberal provision of bath and toilet rooms.

In the central pavilion, the first floor is given up to the general and private offices, staff rooms, head nurse's offices, public waiting room, and, in general, the administrative department. On the second floor, the operating room with its proper dependencies for the use of private patients is located, and a similar operating department is directly over it on the third floor for the use of charity patients.

The third floor over the north and south wings is arranged as two open-air wards for the service of the patients of each department below. Each of these open-air wards is served by separate and independent staircases and elevators, and each is provided with separate kitchens and toilets. A study of the plan will show that the two classes of patients, while in the same building, and on the same floor levels, are absolutely separated, and each is provided with independent service.

The construction of this building is of the most modern and best type. It is thoroughly fireproof throughout. The walls are of brick with hollow brick furring on all outside walls. The external walls are faced with an impervious brick and the trimmings are of Bedford stone. The foundations, floor and roof construction are of reinforced concrete. Partitions are of hollow fire clay blocks.

The roof wards are paved and finished with a vitrified red quarry tile and all of the interior floors are finished with a vitrified white tile with bases and borders of terrazzo. The staircases are of terrazzo treads and risers carried on steel strings. Door frames are of steel. Elevators and stair halls are cut off with metal-covered fireproof doors, and the use of wood

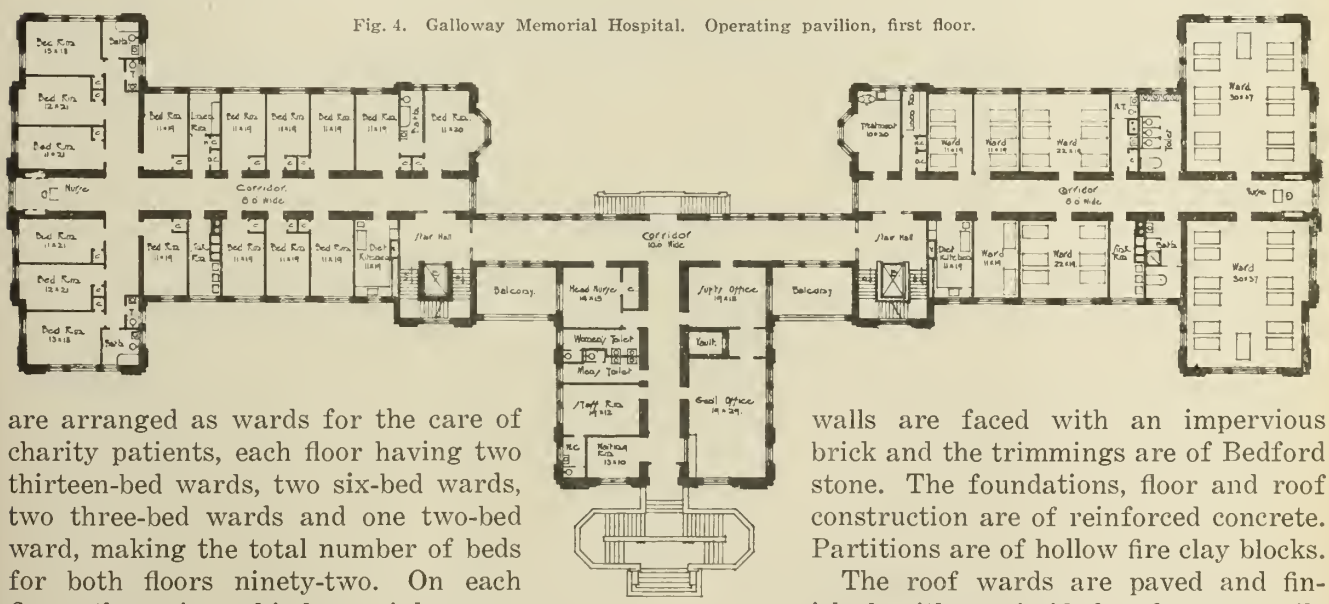


Fig. 4. Galloway Memorial Hospital. Operating pavilion, first floor.

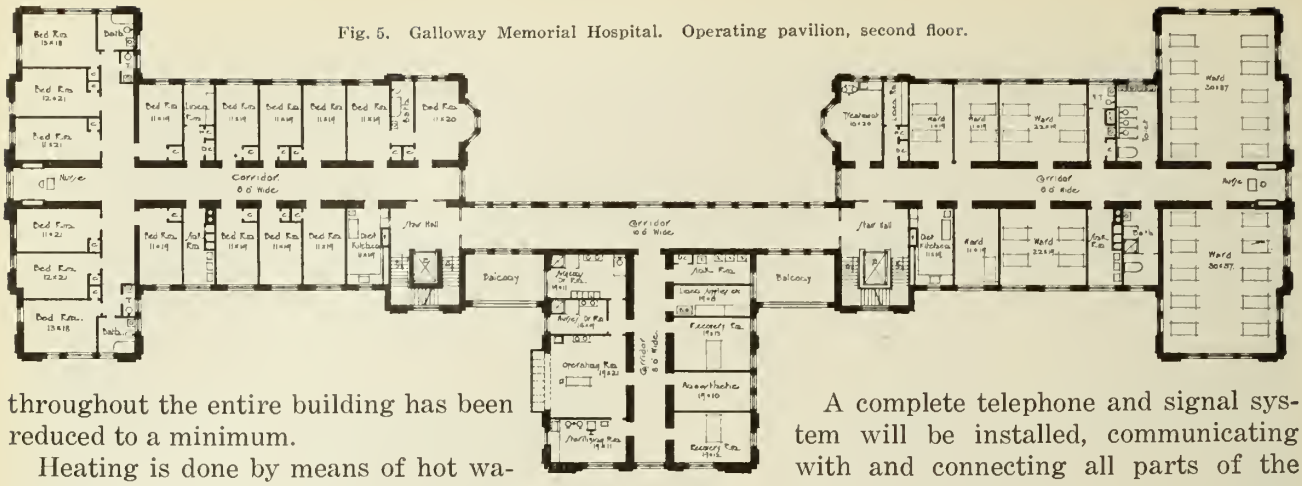


Fig. 5. Galloway Memorial Hospital. Operating pavilion, second floor.

throughout the entire building has been reduced to a minimum.

Heating is done by means of hot water, circulated through radiators located underneath the windows. The heating boilers are located in the present power house, now on the south campus, and the steam and hot water are delivered from this power house to the new hospital building through underground tunnels.

All rooms are supplied with fresh air from a motor-driven fan located in the basement, the action of which is supplemented by a vent fan placed in the attic. Six air changes an hour are provided for all wards.

The plumbing is of the best and most modern type. Supply lines throughout are of brass and all are readily accessible. All fixtures are of vitreous ware and faucets and trimmings are of Benedict nickel, solid metal.

A complete telephone and signal system will be installed, communicating with and connecting all parts of the hospital.

All of the architectural details have been worked out with the utmost care, so that there are no spaces left for the accumulation of dirt or vermin; all parts of the building are designed in such a way as to be readily accessible and cleanable.

Modern conveniences of all kinds will be installed, such as clothes chutes, incinerators, and modern appliances for the cooking and handling of food, and for the proper storage and care of all supplies.

It is the intention of the officers having the erection of the new buildings in charge to make this building as perfect in its construction and equipment as possible, and no pains have been spared to attain this end.

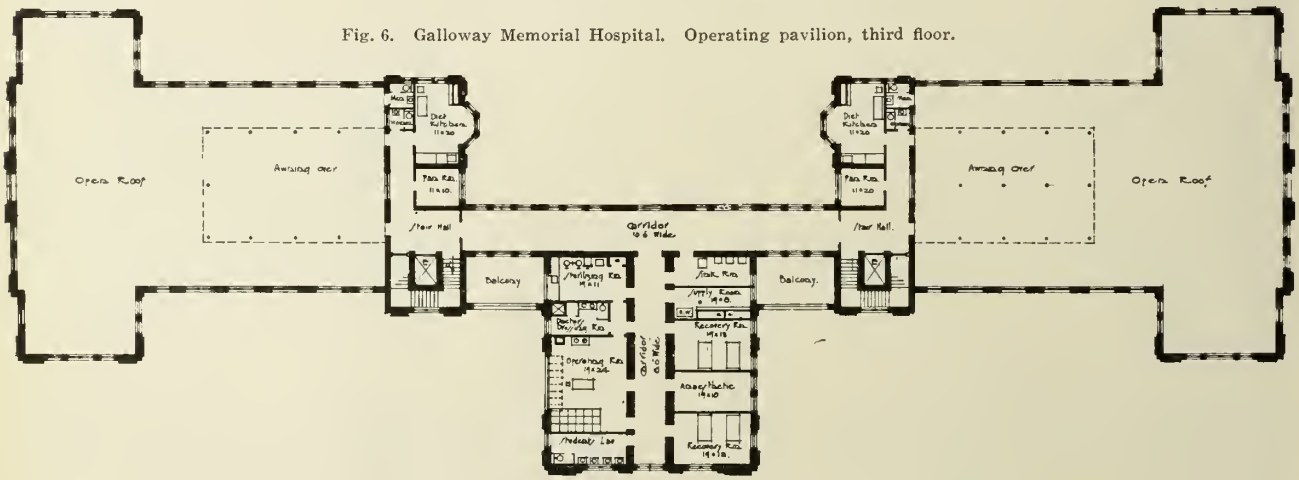


Fig. 6. Galloway Memorial Hospital. Operating pavilion, third floor.

A Practical Examination

The State Board of Nurse Examiners in Massachusetts has been trying out a new plan of examination by which a better knowledge of the candidate's qualifications can be secured. By this plan one day of the examination is devoted to written work and another day to practical demonstration in the hospital. For the examinations held during 1914, the demonstration work has been conducted at the Massachusetts General Hospital.

Naval Hospital Training School

A hospital training school has been opened at the naval training station at Newport, R. I. In addition to the regular work, courses will be offered in pharmacy, chemistry and microscopy. Cooking and mess management will form a part of the course in the commissary school. The students will receive further training in the naval hospitals before they begin service as male nurses on board the warships.

DIETARY ROUTINE IN THE MASSACHUSETTS GENERAL HOSPITAL

Cooperation With Medical Men Makes It Necessary to Measure and Weigh Foods and to Calculate Chemical Constituents—Details of Methods—Hospital Dietetics Developing Rapidly in This Country

By RENA S. ECKMAN, Dietitian Massachusetts General Hospital

THAT a dietary system is a necessity in the treatment of many physical conditions has long been recognized by the Massachusetts General Hospital. That an accounting system in connection with the dietary system, by means of which a physician may know not only how much food his patient is taking, but how much of each food principle the diet contains and the caloric value thereof, is not only recognized, but is actually carried on in the diet kitchen of this institution.

True, many hospitals have not yet waked up to the fact that the dietary department can be of more assistance to their organization than pleasing the palate of the few patients who can afford to pay for carefully prepared foods, or contributing to the pleasure of various favored individuals who draw from that source of supply some appetizing dishes, either for personal gratification or for entertainment.

But results have already begun to show. From one end of the country to another has arisen a wave of enthusiasm with regard to diet. Women have specialized in household problems until they can not only direct the proper preparation of food, but can instruct nurses as to its chemical composition and nutritive value, and make use of this knowledge to prepare suitable nourishment for certain deranged conditions of metabolism.

Give these trained women a chance to know the relation of a household science kitchen to a hospital kitchen; give them a properly equipped hospital kitchen, containing ranges, tables, sinks, utensils, balances adequate to the needs of accurate weighing of food; plan a system of charts to record weights and calculations; evolve a system of cooperation between ward and diet kitchen; then the physician may have information not only of the amount of food ingested, but the balance and amount of each food principle.

The necessity for this work has not only been urged by eminent medical men, but also the fact has been deplored that so little attention is given in American hospitals to alimentary problems. It seems to be the general impression that the scope and possibilities of dietetics are unknown to dietitians.

Happily, however, the outlook is far brighter than is generally supposed. Already dietary systems have been installed in various hospitals. Already there are many dietitians capable of doing just such work as has been outlined in the foregoing paragraphs. Many excellent schools of household science have given special training to prospective dietitians in hospitals. These women sent out from their training schools have worked with enthusiasm over studies in organic and physiological chemistry, invalid cookery, and diet in disease. They enter hospitals and find the only demand is for cooking and dainty serving. There is no opportunity to practice their scientific knowledge. They are sometimes told frankly that it is not balanced menus and caloric values that people want—it is something to eat. If the surroundings are fairly pleasant, and the dietitian adaptable and of an easy-going temperament, she will drop into the required routine, spend her spare time and energies in the social pleasures of entertaining, theater, opera, dress, etc. If more ambitious, she is unsatisfied with mediocre results, and pines for some work which means growth and advanced ideas.

But when hospitals and physicians demand efficient dietary systems, just as surely the time is right for great development in this department. The dietary needs of patients must be recognized by the hospitals; the dietitian's problems must be met half way by hospitals and physicians. The young dietitian should have a practice field in which to work for a time to try out her newly acquired and theoretical and practical knowledge and to gain the hospital point of view. The hospital which furnishes the opportunity does much for the cause of dietetics and much more for the individual who avails herself of the privilege of such apprenticeship.

But what has already been done in hospital dietetics? The Massachusetts General Hospital has been a pioneer worker in developing a practical system for scientific feeding.

First, the wards and the diet kitchen have a corresponding list of diets. These diets are ordered daily or weekly, as needed for certain patients, by the physician in charge. The diet kitchen prepares the food and sends it in separate boxes or baskets, marked to designate the ward destination and the name of the patient. The head nurse on the ward appoints a certain pupil nurse to prepare the trays for the patients for whom the special diets are sent. To assist in the

matter, the dietitian prepares a daily menu for the patients, specifying every article of food for all meals and feedings. With all of these precautions, there is absolutely no excuse for mistakes in feeding patients.

The food not eaten by the patient is returned to the diet kitchen, is there weighed and recorded, the corrections made, the calculations finished, and the record sent to the ward. Generally, the diet kitchen record is filed with the patient's chart; sometimes, instead, the total food nutrients and total caloric values are entered on the regular ward chart.

The diet kitchen records are made out in duplicate, and one copy remains in the diet kitchen for reference. Occasionally a third copy is sent to the chemical laboratory when special research work is being carried on in connection with a case.

Some of the work in food preparation actually done in the diet kitchen during the month of July, 1914, includes the following:

181 gastric ulcer diets.
56 special nephritic diets.
104 salt free nephritic diets.
158 weighed diabetic diets with limited protein and limited carbohydrate.
17 weighed obesity diets.
22 constipation diets.
17 carbohydrate diets (limited protein).
24 low protein and carbohydrate and high fat diets.
21 rachitic diets.
5 nitrogenous diets.
854 special orders of miscellaneous food.
69 fat-free diets.
42 salt-free diets (not nephritic).
8 diets for special research.
38 colitis.
751 full extra meal diets.
1,161 orders of special ice cream.
247 orders of special cream modifications.
1,537 orders of jellies.
1,616 orders of custard.

Two sample forms are given below. The first one contains the order on the diet kitchen for the desired food preparation. The diet is prescribed by the visiting physician, and the house officer directs the head nurse to write the order and send to the diet kitchen.

The second form is that used in reporting weighed diets.

A few details of ways and means may be cited, showing attempts to arrive at accuracy. When a weighed diet is ordered, tests are made from time to time to ascertain the amount of fat lost in cooking bacon or other fat meat.

The hospital purchases cream for use in all the dietary departments which analyzes from 57 to 59 percent fat. This cream is then diluted with milk to furnish thin, medium, or heavy cream for dining room use. For the weighed diets it is only necessary to mix cream and fat-free milk in proper proportions. The amount of fat in the resulting cream is readily calculated, as is also the amount of carbohydrate and protein contained therein. For diabetic patients the cream is used undiluted or mixed with water.

The chemical laboratory of the hospital cooperates with the diet kitchen, and runs a protein, fat, or carbohydrate determination when the necessity arises. More than one outside laboratory has willingly furnished information on request of the dietitian. The nutrition laboratory of the United States Department of Agriculture has helped in the solution of many problems when their records already on file do not happen to give the desired analyses.

REQUISITION.

Kitchen. Ward, 31.

Articles.	Amounts.
Diabetic diet for Antoine Martinello.	Daily.
Protein—70 grams.	
Carbohydrate—50 grams.	
Calories—3,000.	
Diagnosis—Diabetes.	

Mary Smith, Head Nurse.

Approved. J. B. Howland, Resident Physician.

Date, July 12, 1914.

Fig. 1. Diet requisition. Size, 4x7 inches.

Just a few words about the organization of work in the diet kitchen. Some hospitals employ only graduate nurses. In this case it often happens that dietetics has not been a requirement of their training, and hence there is a great necessity in these hospitals for a trained dietitian who will work out her own dietary regime.

Most hospitals, however, depend on the diet kitchen to furnish a practice field for the pupil nurses to train in dietetics. When the latter is the case, the nurses should first be given a series of practical lessons in cooking and a corresponding set of lectures on the theory of dietetics. Then, when they come to the diet kitchen, after the necessary routine work is familiar to them, they are ready to fill orders intelligently.

The number of nurses at work in the diet kitchen should depend on the number of patients and the kind of diet work required. The work may be divided into a beginning semester, with simple duties, acquainting the pupil nurse with

MASSACHUSETTS GENERAL HOSPITAL.
Special Diet Chart.

Name, Antoine Martinello. Ward, 31.
In charge of Dr. Kilgour. Diagnosis, Diabetes. Date, July 12, 1914.

Food materials.	Amount sent.	Amount returned.	Amount consumed.	Protein.	Fat.	Carbohydrate.	Calories.	
Butter, grams	60	10	50	.50	42.50	.....	397	.....
Cream, 30 percent	.....	.....	.....	.....	.....	.....	.....	.....
Cream, 60 percent, ounces	viij	0	viij	3.92	128.00	.....	1206	.....
Milk, f. f.	.....	.....	.....	.....	.....	.....	.....	.....
Milk, whole	.....	.....	.....	.....	.....	.....	.....	.....
Eggs, whole	ij	0	ij	13.20	12.00	.....	166	.....
Eggs, whites	.....	.....	.....	.....	.....	.....	.....	.....
Cheese, American	.....	.....	.....	.....	.....	.....	.....	.....
Cheese, cream, grams	50	25	25	4.67	6.85	.37	84	.....
Steak, grams	100	.....	100	18.90	18.50	.....	249	.....
Chop, grams	100	.....	100	21.70	29.90	.....	367	.....
Chicken	.....	.....	.....	.....	.....	.....	.....	.....
Bacon	.....	.....	.....	.....	.....	.....	.....	.....
Sardines	.....	.....	.....	.....	.....	.....	.....	.....
Salmon	.....	.....	.....	.....	.....	.....	.....	.....
Lettuce, grams	25	0	25	.30	.08	.73	5	.....
Potato, grams	100	0	100	2.50	.10	20.90	97	.....
Oranges, grams	100	0	100	.80	.20	11.60	53	.....
Apple	.....	.....	.....	.....	.....	.....	.....	.....
Bread, white, grams	100	0	20	1.82	.32	10.66	54	.....
Bread, graham	.....	.....	.....	.....	.....	.....	.....	.....
Arrowroot	.....	.....	.....	.....	.....	.....	.....	.....
Oatmeal	.....	.....	.....	.....	.....	.....	.....	.....
Hominy	.....	.....	.....	.....	.....	.....	.....	.....
Rice	.....	.....	.....	.....	.....	.....	.....	.....
Sugar	.....	.....	.....	.....	.....	.....	.....	.....
Ice cream	.....	.....	.....	.....	.....	.....	.....	.....
Custard	.....	.....	.....	.....	.....	.....	.....	.....
Carrots, grams	125	25	100	.53	.17	3.39	18	.....
Cabbage, grams	50	0	50	.30	.05	.20	3	.....
Tomato, grams	100	0	100	.90	.40	3.90	23	.....
Olive oil, grams	39	0	39	.....	39.00	.....	363	.....
Totals	.....	.....	.....	70.04	278.07	51.75	3087	.....

(Signed) Rebecca Reid, Assistant Dietitian.

Fig. 2. Special diet chart. Size, 8x11½ inches.

routine, utensils, and orders. Then a junior and a senior division of the work may follow, the advanced work and responsibility being placed on the pupil nurse in the latter part of her time in the diet kitchen. Experience teaches that the diet kitchen is expensive, because special diet work demands food materials in excellent condition, of high grade, and the articles required are often out of season. Economy in the preparation of food is the most difficult problem the dietitian attempts to teach. An amateur realizes with difficulty her extravagance and often with unwillingness, and frequently deludes herself into thinking that the hospital benefits because of her labors when, in fact, just the reverse is true.

A good servant in the diet kitchen is a necessity. Much of the menial part of the work should be spared the nurses, although they obtain valuable discipline in doing some cleaning up after themselves. Many a careless spilling of food on floor or table will be saved when the person who commits the fault realizes that she must clean up and repair the damage.

While the calculations of weighed diets are simple mechanical operations, most nurses find the work a great hardship. It devolves on the dietitian to be responsible for the accuracy of the reports. The closest kind of attention is required to accomplish this result.

When all of the foregoing has been done, the plan is not complete; neither will the results be satisfactory or valuable unless the dietitian or her assistant can see the patients' trays, see the patients occasionally, receive instructions directly from the physician, and know all the avenues by which an order may go astray or be frustrated.

At least two hospitals in Boston other than the Massachusetts General Hospital have been working along similar lines in their dietary system as outlined in the foregoing paragraphs.

In Philadelphia some such work has been started, and has been followed up through the outpatient department of a hospital into the patients' homes. At the Battle Creek Sanitarium wonderful progress has been made, and the dietary department has unquestionably the finest system known to the writer.

Let us hope that the good work will go on.

FIRST TAXPAYERS' COUNTY HOSPITAL, WASHINGTON, IOWA

Activities of the Washington County Hospital Since Its Creation in 1912—Successful Result of the Much-Discussed Iowa Law—Woman's Auxiliary Board Largely Responsible for Achievements

By DR. C. A. BOICE, Member of Medical Staff, and Miss Elizabeth Finley, R. N., Superintendent

INTRODUCTION BY DR. BOICE

THE Washington County Hospital had its beginning in the spring of 1907, when the physicians of Washington equipped an operating room in a private house and organized the Washington City Hospital.

Here much work was done for five years, and many people were taught the needs and value of a hospital. The imperfections and limitations of this hospital emphasized the need of a more complete institution.

The physicians were shown how essential was cooperation in the successful conduct of such an institution, and they soon realized how much the community needed first-class hospital service and how much more easily and efficiently the sick could be cared for with trained nurse supervision and sanitary environment. The plane of local medical ability was raised, because of the frequent associations and consultations, which stimulated every physician to do better work.

When the Munger Bill passed the Iowa Legislature we were ready for it, and took immediate advantage of its provisions.

The Munger Bill (Senate File No. 166, Enactment of the 33d General Assembly) provides that by a vote of the people the county may levy a tax for the building, equipment and maintenance of a public hospital, to be governed by a body of seven trustees, three of whom may be women, but none of whom may be practicing physicians.

This last provision, which was deemed necessary to prevent any physician obtaining control, unfortunately deprives the board of the direct advice and assistance of the very persons who are most competent to give it. But inasmuch as it is the universal practice to place the government of hospitals in the hands of non-medical people, Iowa county hospitals are no worse off than others. Our board, moreover, has been very faithful in the work and has given no cause for criticism.

The campaign for the hospital tax at the general election was under the supervision of the Washington County Medical Society, and was conducted by the secretary with the assistance of an attorney, who was much interested in the object and who later became president of the board of trustees. The County Medical Society conducted the campaign because it was the only county-wide organization in existence and also because it was and is the duty and pleasure of the physicians to lead in all hospital progress.

As a preliminary, the physicians were asked to sign a petition calling attention to the inestimable value of the hospital in the treatment and alleviation of disease. The law guarantees to all physicians in the county equal rights, and any patient may select his own physician. Every physician in the county signed the petition.

Eight counties in Iowa asked for a vote at this time (November 8, 1910)—and only Washington County was successful in its efforts to have the tax levied. The plan of campaign of the Washington County Medical Society differed from all the others, and as it was the only one successful, we have some reason to believe it the best. It was, briefly, as follows:

Every physician signed the preliminary petition, all the signers being secured in one day. Immediately committees secured, quietly, the signatures of nearly three hundred freeholders (the law required two hundred) and filed these with the board of supervisors ninety days before the election, as the law specified. The board accepted the petition and published the required notice in the official newspapers.

The topic was then immediately dropped, so that no controversy or discussion might arise, and organized effort be directed against the project; for we realized that the efforts of a few workers against a tax-levying proposition far outweigh those of dozens in favor of it. This is exactly what occurred in the other counties in which campaigns were waged; for in these the discussion and argument was carried on for the whole ninety days from the filing of the petition until the election, and resulted in the defeat of the cause.

The petition carried with it a tax levy of one mill per year for four years, in all about thirty-one thousand dollars. The Munger Bill also provided that five percent of the general tax could be set aside for maintenance; in our county this would amount to about eighteen hundred dollars.

During the interval between the filing of the petition and the election, the society's secretary and the attorney were busy formulating plans for a whirlwind campaign in the final week. Each of the nine newspapers in the county on the day before the election carried a strong editorial in favor of the proposition and printed a reproduc-

tion of the ballot and of the physicians' petition. There was not time for opponents to give publicity to any counter arguments.

During the week before election circulars, sample ballots, and petitions to the number of forty-five thousand were distributed, reaching every house in the county. All the school teachers circulated these; every storekeeper in the county placed them in every package of goods he sent out; ministers called attention from the pulpit to the benefits of the hospital; moving picture houses threw the appeal on the screen several times each evening. Every known possible agency was used to make the people think of nothing else but the hospital for Washington County for a week preceding election; and on election day relays of workers were kept at every polling place to pass out sample ballots. As a result of this activity eighteen of the twenty-three precincts gave a majority, in all a total majority of seven hundred and eighty-four. The pre-election estimate had been five hundred. So on November 8, 1910, the first county hospital in Iowa—therefore the first of its kind in the world—was ordered erected at Washington, Iowa.

Fig. 1. Washington County Hospital.

Washington County is one of the earliest settled counties in Iowa, and a rich farming and stock feeding community. Its population is twenty thousand, its area five hundred and seventy-five square miles. Its citizens are both progressive and aggressive. There are twenty physicians in the nine towns outside the county seat. Washington City is near the center of the county, has a population of five thousand, has fourteen reputable physicians, and, for progressiveness and business standing, is one of the best towns in Iowa.

As soon as possible after the election the board of supervisors nominated the first board of trustees. Immediately the trustees organized and decided that the building should be fireproof and that the entire appropriation should be used in construction. As soon as this was definitely decided it was an easy matter to secure the site, the furnishings and the equipment.

Mr. W. P. Wells, at a cost of $3,700.00, donated the William Perry Wells Park for a site. It is a tract of eleven acres, beautifully located, well drained, convenient to paved streets, large enough to make a beautiful park and to provide for future buildings, such as nurses' homes, tuberculosis buildings and contagious pavilions, as the growing needs of the community may require. The hospital, being located in the center of a park of this size, is forever safe from the possibility of buildings or factories being built in the immediate vicinity.

A fireproof structure forty by eighty feet, with three stories and a high basement, was rapidly erected. Various churches, lodges, societies and private individuals contributed the furnishings and equipment, which in all cost about $5,500.00.

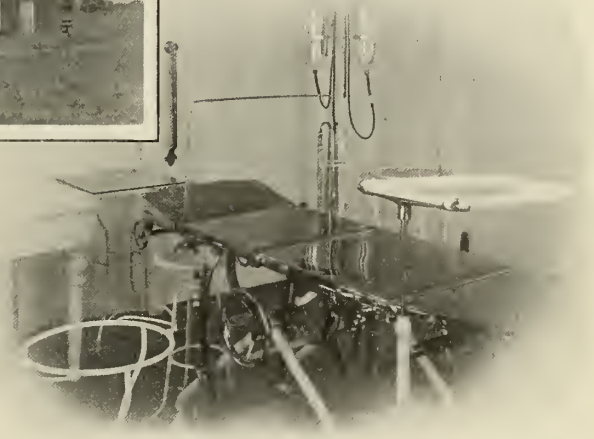


Fig. 2. Washington County Hospital. Operating room.

Figure 1 shows the entrance. The hospital is so located in the park that it is at least three hundred feet from any possible building which may be erected in the neighborhood. This is sufficient isolation from street dust and noise.

Figure 2 shows the main operating room and equipment. The equipment of the operating suite is entirely commensurate with the needs of a first-class hospital.

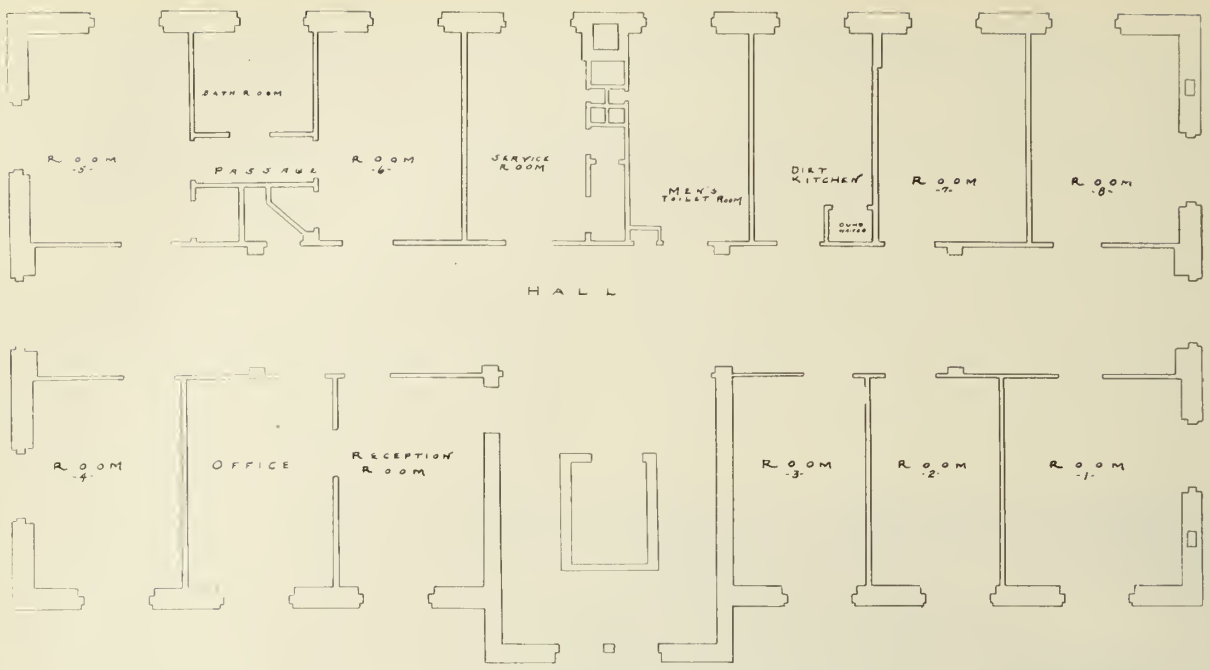


Fig. 3. Washington County Hospital. First floor plan.

The basement contains large and light kitchens and dining rooms, engine rooms, and several store rooms.

Figure 3 shows the first floor plan; it provides for the office, reception room, classrooms, the superintendent's private rooms, and several private rooms for patients. The floors throughout are of terrazzo, with rounded corners and edges, which make them easy to keep clean. The second floor plan is similar to the first floor, differing only in that the private rooms take the place of the office and classrooms.

Figure 4 shows the third floor plan, where is located the operating suite—large and light operating rooms with north windows, a sterilizing room, a dressing room and a bath. Across the closed hall is the maternity or delivery room and two private recovery rooms. The south half of the third floor is given up to the maternity ward and private rooms. The hospital contains nineteen private rooms and two wards of five beds each.

The preliminary arrangements, as might be expected in the case of a pioneer institution of this character, entailed an enormous amount of work, all of which was cheerfully done by the trustees. The law allowed the supervisors to set aside five percent of the general tax fund for hospital maintenance. It was at once found that this amount ($1,800.00) would be entirely insufficient, at least until the hospital was well established and the people fully appreciative of its advantages. The board presented, therefore, to the Iowa Legislature an amendment allowing the board to make an assessment, as the needs of the hospital became evident, not to exceed one mill per year. The law was so amended. One mill tax will raise about eight thousand dollars.

On July 15, 1912, the completed and equipped hospital was opened for the use of the people. The pioneer work done in the previous five years in the Washington City Hospital had now borne fruit; the experimental and educational days were over. The people were educated immediately to make use of the hospital; the nurses were trained; the physicians cooperated, being able and willing to assume the added responsibility; and the county began to reap the benefits in better health and better ways of living. The hospital has therefore been successful from the start.

DESCRIPTION BY MISS FINLEY

The Washington County Hospital has the proud honor of being not only the first hospital in Iowa erected by a direct vote of the taxpayers, but also the first such institution in the United States, as the Iowa Law, or the Munger Bill, is the pioneer legislation of this character.

Dedicated on July 15, 1912, in the presence of more than three thousand interested people, it had a most auspicious beginning. The interest has been crystallized into an enthusiastic desire to upbuild the hospital and to widen its sphere of influence, and to educate the community to the needs and advantages of a well-equipped and well-conducted institution.

Out of the interested audience at this time has grown an active and aggressive Woman's Auxili-

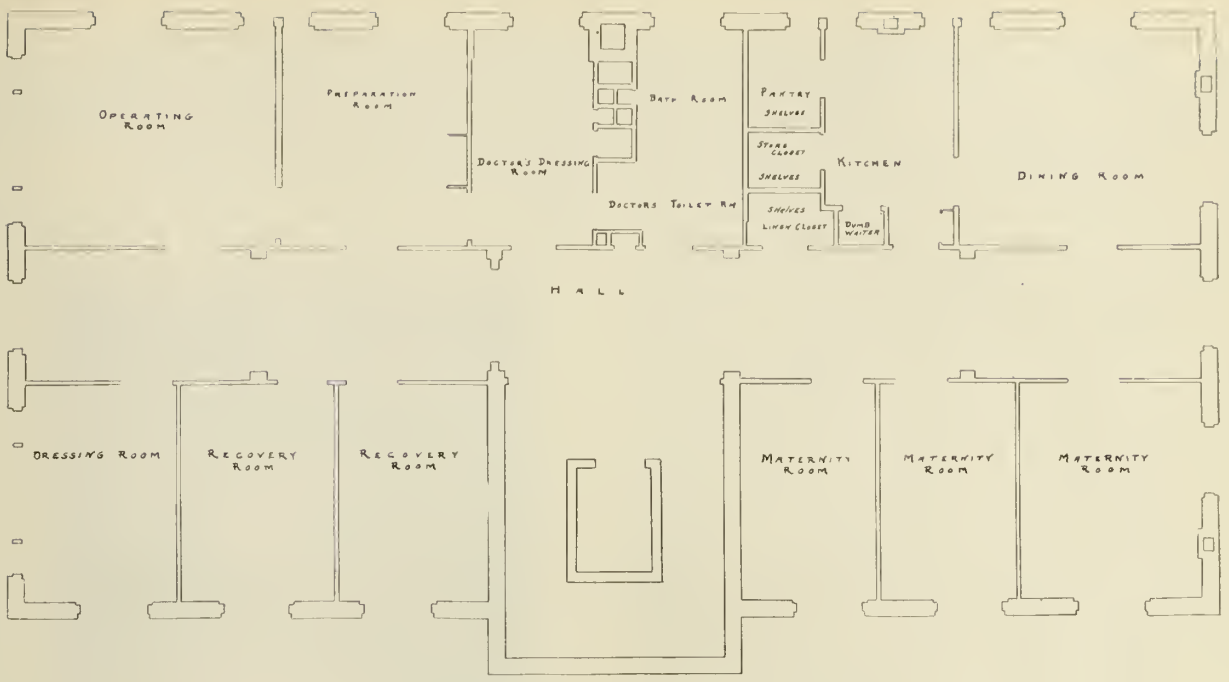


Fig. 4. Washington County Hospital. Third floor plan.

ary. This organization has done much to start the institution on its way to success, caring for the many little things, which are so big in the aggregate; canning fruit; furnishing linen and utensils; adding to the equipment; carrying on, through its various committees, public education for the hospital and public health propaganda for the good of the community; and striving to give to the people an insight into the place of a hospital in the community. A properly organized and working Woman's Auxiliary is the right arm of the small hospital.

The eleven-acre park in which it is located gives ample opportunity for landscape beautification, and allows room for a large garden and a place in which to keep chickens and cows, so that the institution may have its own sources of supply. And the hospital can never be crowded closely by other buildings, as it stands at least three hundred feet from any private grounds.

The building itself was planned with the thought of utmost utility of space allotted; in size forty by eighty feet, of three stories and a high basement. There is an electric elevator in the building; an inverted lighting system; colored lights for call bells; telephone connections in every room; indestructible floors, large doors and windows. These features have been fully justified in the two and one-half years' service. The main kitchen and dining rooms are in the basement, with auxiliary diet and service rooms on each floor. The training school has its own well-equipped diet kitchen in the basement, presided over by a graduate instructor in domestic science. A laboratory suitable for the needs of the institution, and two powerful portable x-ray machines are available whenever and wherever needed.

The hospital charges range from ten dollars to twenty dollars per week for general care and nursing, with a five-dollar fee for maternity and operating rooms.

Two days after the hospital opening, the first patient was received. During the first year, one hundred and thirty-one persons were given hospital care, with an average stay of thirteen and one-half days; the second year, two hundred fifty-six were received, an increase of almost one hundred percent. The average stay this year was eight days, being reduced by a large number of tonsil and adenoid cases whose visits were brief.

During the first year, while everything was new, when few of the physicians and patrons were hospital-trained, the total maintenance cost was $8,771.50. In the second year, when system was being established and cooperation being learned, the total maintenance was $8,746.46, but the number of patients was double that of the first year.

As the system grows more perfect, as cooperation between nurses, physicians and patrons becomes increasingly effective, we expect to care for more and more patients at about the same total expense without in any manner interfering with the service rendered or the results obtained.

A training school was established on April 6, 1913, which offers a three-year course in practical and scientific nursing. The hours of instruction given exceed those of most hospitals and are in excess of the rules of the state board. Five young ladies are now enrolled in the school. Instruction and teaching is by graduate nurses and physi-

cians, and as far as possible the instruction is didactic. The place of the training school in the hospital development of a community is too well known and understood to need elaboration here.

The operating room—equipment, technic and service—is the center of the hospital. The greater part of the work here is surgical and the reputation of the institution depends on the character of the work done in this department. The operating room proper is large, light, airy, clean, and fully equipped. The operating suite comprises the north half of the third floor and is composed of bathrooms, storage and dressing rooms, sterilizing, major and minor operating rooms, anesthetizing room, maternity room, and two large recovery rooms. The entire suite is separated from the rest of the floor by heavy folding doors. Ether is the anesthetic of choice, the drop method being employed exclusively. As far as possible a specially trained observer gives the anesthetics. Gastric lavage is very frequently instituted to prevent post-anesthetic vomiting and to prevent acute gastric dilatation.

Fig. 5. Packing the narrow strip into the bag. The end of the strip is caught with a forceps and carried to the bottom of the bag, where it is fastened securely by sewing through and through, and then successive portions are rapidly packed in with the forceps. When packed in thus, the gauze strip may be drawn out a little at a time as needed.

The continuous sponge—first introduced by Dr. H. S. Crossen of St. Louis*—is used, and no loose or separate sponges are allowed in the operating room while any of the body cavities are open. This sponge was used for three years in the City Hospital, and has now been used for two and one-half years in the County Hospital. This procedure marks such a distinct advance in operating room technic that we cannot too strongly urge its general adoption. The technic of handling the continuous sponge is easily acquired, its use permits just as rapid work, it cuts out the human equation, eliminates the possibility of error in sponge count, lessens by one or two the nurses

Fig. 6. Method of folding.

needed in the room, renders absolutely impossible the leaving of a sponge in the wound, and is an infallible preventive of malpractice litigation. The sponge for "sponging" is made from a strip of gauze ten yards long and eighteen inches wide, folded into a strip three inches wide. The sponge for "packs" is five yards long and thirty-six inches wide, folded into a strip six inches wide. These long strips are sewed into the bottom of proper sized bags and the bags pinned to the towels and sheets about the incision area. Under no circumstances are the strips cut. There being no loose pieces of gauze, none can be left in the wound.

In the first two and one-half years of the hospital's existence, five hundred and twenty-six patients have been cared for. The surgical work has included most of the major operations—arthroplastic, bone grafting, decompression, cesarean section, etc.—as well as minor work; and the results have been surprisingly good.

The small country hospital has its definite place; it has come to stay. It will teach the physician and nurse system and cooperation; it will engender an enthusiasm for better work and for enlarged opportunities; it will teach the community to recognize and demand better work.

(*American Journal of Obstetrics, Vol. LIX, pp. 58-76 and 250-284.)

FIRELESS COOKERS AS AN ADJUNCT IN THE HOSPITAL KITCHEN[1]

Heat Retention and Heat Radiation the Principles Involved—Cooking by Retained Heat —Advantages of Low-Temperature Cooking, From Chemical Standpoint

By FRANCES A. SEELY, Chicago

FIRELESS cookery is the art of cooking by stored heat, as distinguished from continuous contact with heat from flame. Two methods are followed: cooking by radiated heat and cooking by retained heat; both have been practiced from time immemorial.

One application of the art common to all primitive peoples is the use of hot stones in preparing certain much-prized foods. South Sea Islanders cook fish by first digging a shallow pit and building a fire over stones laid at the bottom. After the fire is out, the fish, wrapped in leaves, are placed upon the hot stones and covered with earth, which confines the heat and produces a delicacy highly praised by travelers of all races. Gypsies cook the hedgehog in a similar manner. An illustration nearer home is the clambake of New England. The same principle was employed by the colonial dame in executing her culinary triumphs. The fire in her ample brick oven died down and the ashes were raked out; the foods were inserted and cooked with the heat radiated by the hot brickwork. The American Indian squaw at some time in the remote past was confronted with the problem of cooking in a vessel which would not resist fire. She solved it by putting water in the vessel, and dropping hot stones into the water until it boiled sufficiently to cook the food. Her clever invention was adopted generally; the method is described by the Jesuit missionaries in the story of their wanderings through the American wilderness. These instances illustrate cooking by radiated heat; in other words, a method in which a heat-absorbing material is heated far above boiling point and used to cook foods by radiation.

Cooking by retained heat is illustrated by the Chinese method of placing a pot of tea in a padded receptacle, in which it keeps hot for many hours; and also by the practice of the Norwegian peasant of placing a kettle of hot food between feather-beds or in a pocket of hay enclosed in a barrel or box. To this latter device the origin of the modern fireless cookstove may be traced. The addition of cloth linings to keep the hay in place and to form a covering pillow are self-suggested improvements. A wooden box thus constructed and called "The Norwegian Automatic Kitchen" was shown at the Paris Exposition in 1867, but did not attract the attention of housewives. For many years the Norwegian cooking box served chiefly to add a few paragraphs to works on domestic science; but in 1905 great effort was made in Germany to arouse interest in the economy and improvement to be gained by using the fireless method. A United States consul reported the results of his observations of this movement, and the department of agriculture spread the account broadcast. The element of mystery in cooking without fire stimulated one housewife after another to make a "hay box" and "try it for herself." Their stories of the wondrous results, related in the "Home Departments" of their favorite newspapers, created great interest throughout the country, and led to a large output of manufactured devices to supplant the home-made boxes. In the beginning only the boiling processes were attempted, but by degrees radiators of soapstone or iron were introduced, so that baking and roasting also could be performed.

Practical limitations make baking and roasting with radiators of little interest to the modern hospital. Quantities must be small and with few exceptions there is no advantage in quality offering inducement to change from the usual ways of baking and roasting in large quantities. But cooking by retained heat has not these drawbacks. It is entirely practical to handle quantities sufficient for the largest of institutions, and the quality of product of many foods cannot be equaled by any other method of cooking.

COOKING BY RETAINED HEAT—THEORY

Cooking by retained heat is accomplished by boiling a kettle of food several minutes over flame and then placing it in a closed container, insulated so that only a small portion of the heat shall be lost each hour. Cooking is completed solely with the heat thus stored and retained. The temperature never exceeds the boiling point, which limits the method to the boiling processes.

Cooking proceeds to completion because the process can continue under temperatures considerably below the boiling point. Albumen begins to coagulate at 134° Fahrenheit and is completely cooked at 160°. Cells containing starches break up at 140°. Cooking, therefore, does not cease the instant flame is cut off, but continues until the

[1]This is the first of a series of articles on fireless cooking in the hospital. The editors believe there are certain economies and advantages to be had with fireless cooking, and the subject is not yet well understood by hospital people. Mrs. Seely, one of the pioneers in the field with fireless cooking devices, was, for that reason, asked to contribute a series of articles on the subject.

temperature drops to these comparatively low points. This takes place rapidly when the kettle cools in the air of the room, but when the period is lengthened by enclosure in an insulated receptacle, several hours of effective cooking are added without further application of heat from flame. Thus it becomes possible to shorten the usual boiling period on the stove to the time required for heating thoroughly the inner particles of the masses of food. The retention of this heat for a sufficient period will do the cooking. The early cessation of boiling is beneficial in several ways: hardening of albumen by long exposure to excessive temperature is avoided, dissipation of flavors in the ebullition of steam is curtailed, and characteristic aromas are more completely preserved.

Fireless cookery requires, first, a standard of insulation which will sustain a long cooking period, and, without reheating or reboiling, deliver perfectly cooked food hot and ready to serve; and second, the exact proportions of materials, and proper duration of time on stove and in cooker, which will produce the best results. The best results are attained when the cooked food presents perfection of shape and tenderness of structure with a minimum of shrinkage; or (if a dried fruit or cereal), with a maximum of hydration and expansion; and, withal, the combination of distinctive flavors most pleasing to the discriminating taste.

This standard of heat retention in the cooker and of quality in the product was established by the writer soon after a few trials had shown the home-made "hay box" to be far more retentive of stale cooking odors than of heat. The effort to make something better resulted in the first all-metal sanitary fireless cooker. The standard of heat retention was soon attained, but the establishing of the best proportions of materials and the proper duration of time on stove and in cooker required much experimentation, prolonged over several years.[1]

Cooking is a chemical process, and under the conditions of fireless cookery it assumes the accuracy and certainty of the operations in a chemical laboratory. A certain effect is produced with exactness by the period of boiling on the stove and certain other effects by the long after period in the fireless cooker. During the time on the stove the temperature is held evenly at the boiling point. During the time in the cooker it falls rapidly to a few degrees below the boiling point and then slowly, without fluctuation or wavering, it lowers in diminishing progression to the minimum cooking limits. Given the proper proportion in the materials, the effects of this treatment upon foods is marvelous, unique and highly desirable, and are obtained with unfailing uniformity and regularity. In many foods the experimentation demonstrated a marked falling off in quality of product when a certain duration of boiling was varied, and particularly when it was exceeded. For this reason the fireless cooker is preferable to the steam kettle. With the cooker the boiling period can be limited with exactness and a long after period secured of slowly diminishing, simmering heat, all of which is impossible with the steam kettle. Also, in all-night cooking, the cutting off of steam from the kettle interjects a period of complete cooling down followed by one of reboiling, which is destructive of the finer qualities sought in good cookery.

The effects produced by fireless cookery upon the commonly used foods will be discussed in detail in succeeding articles and the improvements and economies which have been realized again and again by dietitians in well-known institutions will be pointed out.

[1]The results of these experiments are embodied in recipes and directions which are inflexible. The "practical" cook who adds a little of this and a little of that until it "looks right" must change methods and follow directions precisely in order to succeed with fireless cookery. Nothing can be added or boiled down in the cooker; the character of the product is foreordained and unalterable when it leaves the range.

DELL RAPIDS, S. D., OPENS NEW HOSPITAL

Small, Modern Building Erected at Low Cost

The Dell Rapids Hospital, which has just been opened at Dell Rapids, S. D., was erected by a locally organized corporation of two hundred and fifty shareholders.

The building is an attractive two-story and basement structure, 78x38. The basement story is constructed of Dell Rapids granite; the first and second stories, of pressed brick and tile. Asbestos shingles were used.

In the basement, besides the furnace, is a suite of four rooms for nurses' rest or reading rooms, with sleeping apartments; also a laundry, laboratory, pantry, kitchen, serving room, nurses' dining room, and cupboards and closets. Pantry and kitchen are finished in white enamel.

On the second floor is a large reception room, opening from which are physicians' private rooms, and next to these the x-ray room. The rest of this floor, with the exception of lavatories, etc., is used for patients' rooms.

The operating room is on the second floor, in the northwest corner. It has a large skylight, electric lights, tile floor, and marble baseboards. The walls are finished in Keene cement. Connected with it is the sterilizing room, and the dressing room is just across the corridor. On this floor are two wards and several patients' rooms.

The corridor floors are covered with battleship linoleum, and the stairs with rubber matting. Each floor is equipped with 75 feet of fire hose, and the water system is connected directly with the city mains. There are also vacuum cleaner connections on each floor. A silent signal system has been installed.

The cost of the site and the building, without equipment, was $22,000. The site cost about $5,000.

The hospital was built largely as a testimonial to Dr. M. M. Grove, who has built up a large surgical practice in the community and won the greatest confidence of the people. Dr. Grove will have charge of the hospital.

Hurley Hospital. Front view.

HURLEY HOSPITAL—A NEW MUNICIPAL INSTITUTION AT FLINT, MICH.

Founded by Wealthy Citizens and Presented to the City, Which Provides Liberally for Its Conduct—Local Medical Society Acts in Advisory Capacity—But There Is No Medical Staff

By ANNA M. SCHILL, R. N., Superintendent

FLINT'S municipal hospital, one of the best equipped and most modern general hospitals in the state of Michigan, was founded in 1905 by James J. Hurley and bears his name.

Located on nearly two blocks of high ground, just within the western limits of the city, its situation commands a view of the surrounding country and constitutes an ideal spot for a hospital.

It is owned and operated by the city of Flint, is supported by taxation, is open to private as well as free patients and is managed through a board of five men, all of whom are laymen, appointed by the mayor and common council. There are no doctors or women on the governing board. The Genesee County Medical Society, however, have three representatives whom they appoint to meet with the board of hospital managers to make suggestions whenever they deem it necessary. These men are welcomed to all board meetings and are notified when matters which are especially interesting to the medical profession are to be discussed.

At the time of organization and building there was a woman's auxiliary board which by subscription and donations provided funds with which to furnish the private rooms. This board also provided linen when the hospital was opened and replenished it as needed until two years ago, when they disbanded.

A yearly appropriation from the city enables Hurley Hospital to meet expenses without the public subscription which is generally so essential to the small hospital.

There is no medical staff. All physicians of good standing in the community are allowed to send their patients into the hospital and to treat them there, having equal privileges in the use of the operating rooms and other equipment.

The official staff consists of the superintendent of the hospital and training school, assistant superintendent, surgical supervisor and night supervisor, all graduate nurses, and a graduate dietitian who also acts as housekeeper.

The buildings are of colonial design, built on the pavilion plan, exposed on all sides to the sunlight and fresh air. The architectural effect is one of simplicity. A two-story administration building with three pavilions, those on the north and south connecting with the main building by bright, sunny corridors, constitutes the original hospital. A basement, extending under the main building, west pavilion and corridors, furnishes space for dining rooms, kitchens, store rooms, laundry and boiler rooms. The first floor of the administration building has a large, well-lighted vestibule and lobby in the center. Opening off from this lobby are the reception room, superintendent's, bookkeeper's and secretary's offices, elevator and superintendent's apartments.

The north pavilion contains eight private rooms,

a nursery of six beds and a woman's ward of twelve beds, diet kitchen, toilet, bath, linen and utility rooms, nurses' office and solarium.

The south pavilion contains five private rooms, a men's ward of sixteen beds, diet kitchen, toilet, bath and utility rooms, nurses' office and solarium.

The first floor of the west pavilion, with the exception of one room which is reserved for an x-ray room, is occupied by domestics and by those probationers for whom there is not accommodation in the nurses' home. In 1912 additional accommodation for patients was made by raising the west pavilion, making it two stories high and connecting it with the second floor of the administration building, where are located three well-equipped operating rooms, two for general surgery and one for the specialties of the eye, ear, nose and throat; sterilizing room, doctors' dressing room, general utility and supply rooms. This addition contains seven private rooms, two small wards of five beds each, a diet kitchen, bath, toilet, linen and utility rooms, nurses' office and solarium. It increases the capacity of the hospital from forty-five to sixty beds.

Two years ago there was also erected, just north of the hospital, a beautiful new home for the nurses who had been previously quartered in the west pavilion of the main building of the hospital and in rented rooms in the neighborhood. The home is built along colonial lines to correspond with the architecture of the hospital. It is three stories high and provides accommodation for twenty-one nurses. On the first floor there are two large reception rooms, and in the basement a lecture room furnished with writing chairs, blackboard, etc. Extending across the entire south side of the building is a large porch which is accessible only through French doors leading from the reception room. The home was furnished throughout by the late Dr. J. C. Willson, well known to the medical and nursing professions of Flint and Michigan.

Hurley Hospital. Front view, Nurses' Home.

There is approaching completion a new power plant, equipped with two 70-horsepower boilers which provide steam for heating, cooking, sterilizing, etc., for all present buildings. Space has been provided for additional boilers when the final buildings are added to the present group.

In the new building is located a laundry, well equipped with modern machinery, and a sterilizing room for the sterilization of infected clothing, pillows and mattresses. This room has a door opening from the outside through which infected articles are brought into the room and put into the sterilizers. Through another door opening outwards from the laundry, sterilized articles are removed when clean. The valves for steam are on the clean side of the partition.

The power plant furnishes space for an incinerator for the disposal of garbage and refuse and for machinery for a vacuum cleaning system with which the buildings are equipped throughout. The new building is located across the street west of the hospital and is connected with it by an underground tunnel. When completed it will be possible to have all machinery, which has

Hurley Hospital. One of the wards.

Hurley Hospital. Living Room, Nurses' Home.

been a great source of annoyance to patients, removed from the hospital. There will then be room for a larger dining room for the nurses and for larger kitchen and serving rooms.

The details of the interior finish in every part of the hospital have been carefully studied. All corners are rounded and everything has been done to make the buildings as easy to clean and as nearly aseptic as possible. The woodwork is of white enamel with the exception of the doors, which are of plain mahogany finish. The floors, with the exception of those in the operating rooms, diet kitchens, toilet and bath rooms, which are of terrazzo, are of white tile and white maple.

Plans are about completed for a maternity and children's unit and an addition to the nurses' home. This building will connect with the present north pavilion by a large, sunny corridor and will be two stories high. The first floor will contain nine private rooms, delivery rooms and sterilizing rooms, diet kitchen, linen, bath, toilet and utility rooms, nurses' office and solarium.

The second floor will contain three private rooms, one ward each for boys and girls, one for infants, diet kitchen, bath, toilet and utility rooms, nurses' office and solarium. This solarium will be of the same size as that on the floor below.

In the basement there will be three well-equipped rooms for x-ray work, and a laboratory for microscopic work.

The women who aided so nobly in the furnishing and equipping of the present building have reorganized, and by entertainments, street fetes, etc., are raising funds with which to equip the new building when completed.

The next immediate need of Hurley Hospital is a contagious cottage. It is hoped that this want may be met in the year following the completion of the maternity and children's pavilion.

The buildings were designed by Malcomson & Higginbotham, of Detroit, the work being executed under the direction of Mr. Higginbotham. The material used in construction is red brick.

The present total value of fixed property, including the estimated cost of the building approaching completion, is $140,-611.25.

From December 19, 1908, the date of opening, to December 31, 1914, 5,020 patients have been treated in Hurley Hospital.

Schoolgrams

"Schoolgrams" is the interesting title under which Mr. Sherman C. Kingsley, director of the Elizabeth McCormick Memorial Fund of Chicago, publishes seven interesting epigrams relating to the child and fresh air. These paragraphs are published in attractive form upon a post card and may be obtained from the office of the Elizabeth McCormick Memorial Fund, 316 Plymouth Court, Chicago, Ill. The "schoolgrams" follow:

What shall it profit a child if he gain the whole curriculum and lose his health?

The only air available from dark till sunrise is "night-air." Breathe it.

Two things of which there are enough for all—fresh air and sunshine. Get yours.

Switzerland requires her school children to be in the open air at least ten minutes out of every school hour.

Teach your child to make a childhood friend of the open air.

A question that should be asked about the ventilating system of every school—does it ventilate?

The only night air that is injurious is last night's. Open the window and let it out.

Hurley Hospital. Rear view.

THE GENERAL GOVERNMENT OF STATE HOSPITALS[1]

Early Excellent Form of Trusteeship Destroyed by Political Dictum That "To the Victors Belong the Spoils"—Central Board Control Does Not Destroy Initiative of Capable Executive Officer

By HENRY M. HURD, M. D., Baltimore, Md.

THE control of state hospitals by trustees, like many other developments in connection with the care of the insane in the United States, came from current methods of organizing and governing the early general hospitals of the country. These methods of control in Philadelphia at the Pennsylvania Hospital, established in 1751; in New York, at the New York Hospital, opened in 1791; in Boston at the Massachusetts General Hospital, opened in 1818; and in the Hartford Retreat, established in 1828, were through self-perpetuating bodies variously termed Boards of Managers, Governors, Directors or Trustees. Corresponding boards for state hospitals generally appointed by the governor of the state and confirmed by the Senate or Governor's Council, held office for specified terms, and in one or two instances only were they self-perpetuating. They represented the state and governed the affairs of the hospital in its name and with its authority. Originally such governing bodies were wholly free from party bias and their members were appointed because they had been successful men and had a talent for administration. They expected no compensation other than necessary traveling expenses and were glad to serve the state from motives of patriotic feeling and a desire to promote the public welfare. They brought to the state in the management of its hospital a degree of ability and skill which could not have been adequately rewarded by the payment of any salary, however large, and it was deemed an indignity to the men who served in these capacities to offer them merely nominal pay. They had an honest pride in serving the state in the care of its public institutions. They formed a body corporate and from the experience acquired during their long tenure of office were able generally to act with mature judgment in all matters affecting the welfare of the institution.

If such governing bodies in every state had always remained free from party politics it is difficult to see how they could have been surpassed in excellence, but unfortunately too often they were not permitted to do so. This was especially true in the border states prior to, during and succeeding the Civil War, when party control in many states was held by a narrow margin and members of both opposing parties felt justified in appealing to every motive which could attract the voter or reward party fealty. Such political considerations in too many cases led governors of states to appoint trustees or managers governed by the hateful dictum that "to the victors belong the spoils," who appointed in their turn men whose qualifications were principally that they were sympathetic with their own personal political convictions. As a result state institutions became demoralized by incompetent officials and, the standard of efficiency being set by party standards rather than by considerations of the welfare of the institution, serious difficulties, and even scandals arose in administration.

In some of the newer states boards of trustees had not been appointed, but the management of institutions had been placed in the hands of ex-officio boards, especially where the institution was situated at the state capital. These boards were often composed of state officers, as the governor, treasurer or secretary of state. Sometimes a single appointee, generally one of the governor's appointment, was associated with these officers as an executive of the board. As these state officers received no compensation for their work, it was not strange that they often were reluctant to give much time to their duties and were generally superseded by other boards when the hospitals of a state had outgrown the pioneer period. There has been a tendency, however, to retain the principle of centralized control. As a result of this, in many commonwealths so-called Boards of Control consisting of from three to seven salaried members have been established to manage not only state hospitals, but also other penal, reformatory and charitable institutions. In Minnesota, in fact, such a board was at first charged by law with the administration of the State University and the State Normal School. It was soon apparent, however, that such a union of charitable and educational institutions was unwise because demoralizing to the latter, and the law was amended.

The abuses which had followed political control and the acknowledged inefficiency of ex-officio control suggested the need of finding capable men who were morally fitted to make it their business to manage public institutions and who could bring to the work a high degree of administrative abil-

[1]This is the first or introductory in a series of papers on the Conduct of State Hospitals. Next month will appear "The Medical Organization of State Hospitals for the Insane," by William Mabon, M. D., Superintendent and Medical Director Manhattan State Hospital, Ward's Island.

ity, some knowledge of law and a business experience. In some states expert accountants, lawyers, physicians and business men were appointed with good results. Improved methods of care, better food, better clothing, better classes of employees and better financial results are acknowledged by all to have followed such appointments. As a rule these boards have been independent of politics and in some states they have made notable advances in civil service methods. The Iowa Board of Control was one of the first established and later similar boards were created in Minnesota, Kansas, Wisconsin, Illinois, Ohio, and many other states.

The Board of State Commissioners in Lunacy in New York, now known as the State Hospital Commission, has been in effect a similar Board of Control. At first it was composed of a physician who by virtue of his professional experience in the treatment of mental diseases was made president of the Commission, and two other members, a lawyer and a business man. Originally the commissioners were given advisory and supervisory powers, but when state care had been established and all of the insane of the state were gathered into state institutions it became evident that the Commission needed larger powers and they were accordingly conferred by legislation. The Lunacy Commission was changed from an advisory and supervisory board to an actual board of control with manifest advantage to the institutions and the patients under treatment in them. It has been thought by some that the autocratic powers thus given a single body tend to hamper individual initiative on the part of executive officers in the different institutions. It is evident that this conclusion is not susceptible of proof and must be viewed as an *a priori* assertion. It is generally conceded, however, that the Commission has used its powers wisely and has promoted the comfort and proper treatment of patients. It has also developed better methods of investigation of disease and more uniform business methods. From the viewpoint of the state the salaried Board of Control and its specialized product, the New York Lunacy Commission, or, as it is now known, the State Hospital Commission, have justified their creation. That the personal interest formerly shown in such institutions by boards of managers or trustees was a valuable asset is shown by the late tendency in New York to reestablish them and to enlarge their powers by giving them a voice in the appointment of superintendents and other officers and employees.

In Ontario, the Board of Control has dwindled down to a single lunacy commissioner to whom has been given the responsibility of the supervision and government of state hospitals under the overlordship of the Home Secretary. The arrangement is not to be commended because it has apparently resulted in making appointments and promotions the reward of political service and not of experience or long years of faithful service.

INSURANCE FOR THE HOSPITAL—VARIETIES AND LIMITATIONS

Fire, Casualty, Malpractice, Boiler Plant, Elevator, Fidelity, Are Some of the Items to Be Covered—Agent's Responsibility—Trustees' and Administrators' Duties—Manner of Keeping the Records

By ALBERT A. JOHNSON, Insurance Expert,
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IT has frequently been the experience of specialists in hospital efficiency that one of the branches in the operation of the average hospital which is most lax in conduct is that of the purchase of its insurance. There are many reasons why this is the case. First and foremost is the intangible nature of insurance. Coal, bread, meat, carbolic acid, bandages, all can be weighed or measured or counted: you can feel and see them, test their quality and compare prices; their consumption can be checked, and any waste detected.

With insurance all you get is a packet of papers couched in language more or less puzzling to the wayfaring man, and often further complicated by numerous endorsements attached to the original documents. There is nothing strange about this inability to comprehend a policy.

Insurance is a highly technical business. Policies and policy forms have been drawn to meet various legal conditions, which have grown out of decisions by the courts. They must in many features comply with state laws and rulings by insurance departments. They are contracts of a definite nature to pay losses arising from certain contingencies, and must be so framed as to meet these contingencies only. As, for example:

FIRE INSURANCE

A fire policy pays for losses from fire; it also pays for damage from water used in putting out a fire. It does *not* pay for loss from a leaking roof or bursting water main. A hospital superintendent is not an insurance man; he is not hired as such, but for his knowledge of hospital admin-

istration. In his own mind he may realize what insurance the hospital needs, but unless those needs are incorporated in carefully drawn policies the hospital must take its chances with policies made out and approved in perfunctory fashion and perfectly good only so long as no loss occurs.

Another reason lies in the nature of hospital management. A factory or store is run to make money for those interested. Naturally, when it touches their pockets the owners are going to see that they do not pay excessive premiums and that they receive proper protection against the hazards of their business. With a hospital, carried on as a semi-charitable institution under a board whose services are contributed voluntarily, and who have no personal money interest at stake, there is no such incentive. With the best of individual intentions it can hardly be otherwise. Those who are competent to do such work as a rule have their hands full of other things, while those serving purely from social considerations often lack the necessary training.

Then, too, there is the division of responsibility. Everyone's business is no one's business. Inadequate insurance or no insurance does not force itself on the attention. Cold rooms, poor food, inferior medical and surgical supplies make themselves known at once. But as long as nothing happens insurance gives no sign of warning to the trustees that either through carelessness or a "penny-wise-pound-foolish" policy of trying to save a few premiums they are placing in jeopardy the charge committed to their stewardship.

THE AGENT'S RESPONSIBILITY

A third factor is the local agent. In most instances he is a bright man and a good underwriter. On the other hand, especially in the smaller places, his experience is limited. Very often he is primarily a fire insurance man with only a slight knowledge of those branches of casualty insurance which now are as essential as fire insurance. If he contribute to the hospital and he or members of his family serve on its board the insurance is very apt to drift into his office; which is perfectly right and proper provided he can handle it. The worst condition arises when, in an effort to make everybody happy, the insurance is farmed out among several agencies, without any central expert supervision. Each agent writes up policies according to his own taste and fancy. When a loss occurs it is only through good luck that there is no trouble in making adjustments. It may even be so bad as to lead to protracted and expensive litigation to determine the rights in the matter.

Often a hospital has grown from small beginnings. It has been started when a town was young and has shared its development. The original building has been enlarged and other buildings put up from time to time. As the plant has grown, more insurance has been taken out, covering now this part, now that. The result finally is a conglomerate of policies covering different parts of the property at different rates, with different expirations and utterly devoid of any system.

To attempt to prescribe any hard and fast system to cover all hospitals would be on a par with the "absent treatment" of the Christian Scientist. Each hospital has individual needs which should be considered. A small plant all under one roof is very different from one where there are a number of buildings of various kinds. In any case a correct appraisal and inventory of all buildings and contents should first be made. This will give the proper figures for insurance and will also show where the separate values are located.

With the use of the coinsurance clause this is absolutely necessary. Under the 80 percent clause the amount paid to settle any loss bears the same proportion to the amount of that loss as the amount of insurance carried bears to 80 percent of the value of the property. For example: value of property $100,000. 80 percent of this is $80,000. Insurance $50,000. $50,000 is 5/8 of $80,000. The company therefore pays 5/8 of any loss. This is on the principle that, when the insured is carrying a less amount of insurance than a certain proportion to the value of the property, he becomes a co-insurer for the difference and must stand his proportion of loss. Of course, with a total loss, where the entire plant was wiped out, the full face of the policies would be paid.

With a knowledge of the requirements of the rating bureau, which has the fixing of insurance rates in the district where the hospital is located, much may often be done through correcting structural deficiencies or putting in fire-fighting apparatus to secure a reduction in rates and also to diminish the chance of fire.

THE SPRINKLER SYSTEM

In the case of one New Jersey hospital this has been carried so far as to instal a sprinkler system. This is a system of overhead piping running to every part of the building, stairways and closets not excepted. A central tank supplies these pipes with water. At intervals along these pipes are "heads." These are outlets, which when open let out a shower of water. They are kept closed ordinarily by a link of metal, which is made to melt at a certain temperature. When the temperature of the room rises to their melting point these links fuse, the heads open and a shower

drowns out the fire. It is just the old ounce of prevention. In a large plant such a system will pay for itself in time in the savings in rates, while, under any circumstances, it does so much towards making the entire hospital safe from fire that it deserves a careful consideration. This is particularly the case with a hospital or sanatorium out of town, where the protection afforded by fire departments or hydrants is slight or lacking altogether.

Care should be taken to install a system that is approved by the board of underwriters. A second-rate system is worse than none. It gives a false sense of security. It may or may not act when it should, and it may act when it should not, and do a large amount of damage by flooding the place with water. As such a performance was described in a trade paper—

"The sprinklers sprinkled all night,
While the stars twinkled all night."

To meet such a contingency sprinkler insurance has arisen. This takes care of any loss arising from defects in the system. Sprinkler heads opening at wrong time, leaks or collapse of tank are all covered. "Water damage" is a somewhat similar form of insurance, which can be carried along with sprinkler insurance, or by itself, when there is no such system. It takes care of all losses from water damage, from plumbing or heating systems, open taps, leaking roofs or leaders, and open windows.

CASUALTY INSURANCE

Fire insurance has been in existence so many years that the general public has become educated to it. It is only in recent years that we have begun to learn the necessity of casualty insurance. Hospitals need several forms of this kind of insurance. To attempt to carry on a hospital without them is taking a chance of involving it in losses which would cripple it as seriously as a fire loss with no fire insurance.

Many states now have "workmen's compensation laws." Under these laws an employee, who is injured during service for an employer is entitled to a certain definite compensation depending on the severity and nature of the injury and amount of wages received. The old defenses of "assumption of risk" and "negligence of fellow servant" are eliminated and only in the rare instances where intoxication, or a wilful negligence, or disobedience of orders can be clearly proved, does the employer stand any chance of escaping his liability.

If a nurse strains herself in lifting a patient, if a doctor contracts blood poisoning from an operation, if an orderly trips and injures himself by a fall down stairs, in each case the hospital would have to pay. Even a stenographer who happened to be run over while taking a deposit to the bank for the hospital would come under the law. It is easy to see that in the case of a bad accident where a number of employees happened to be injured the payments in question would be very heavy and might be a severe draft on a hospital's resources. Compensation insurance takes care of this.

There is also a liability to the public for accidents. This applies not alone to patients, but to anyone on the premises or walks adjacent. Damages have been obtained for injuries from slippery sidewalks, bricks or ice and snow falling from roofs, defects in stairways and floors, insufficient light on stairways, glass blown from a window, a pile of rubbish causing a fall, defective balcony railings, to mention just a few cases. These are not theoretical, but actual findings in courts in various states, which can be looked up and verified. Under a general liability policy these contingencies are covered. If there is an elevator in use it should be covered, either by a separate policy, or by endorsements on the compensation and general liability policies, as accidents arising from the operation of any elevators are distinctly excluded unless specifically covered as above.

MALPRACTICE INSURANCE

This does not, however, take care of one class of suits, that brought by a patient alleging wrong treatment or negligence on the part of doctors or nurses. It is very easy to start such a suit. Any unscrupulous lawyer will do it, if he sees half a chance to get something on a "contingent fee" basis. The least cause will serve as the groundwork. A burn from a hot-water bag, a broken limb not properly set, infection following an operation, or, where an antitoxin has been used, a claim that it was improperly or wrongfully administered, are just a few sample instances. The cost of defending such a suit is large. One casualty company states that it costs on an average $1,000 a suit, while at the present time it has one suit being carried on, which has cost so far $8,000, and is not yet decided. In some cases it has paid $300 a day for expert testimony. This company also tells me that it is now engaged in defending over thirty suits. Such suits are becoming more and more prevalent. Even if a suit is groundless and the hospital wins, it has been put to expense and annoyance, not to mention publicity of very unwelcome description. The remedy is hospital defense and indemnity insurance, where the casualty company bears all expense of defense, and, in the event of an adverse decision, pays in addition damages up to a certain fixed amount.

There is one hospital not a hundred miles from New York City, which has a three-thousand-dollar motor ambulance running around town uninsured. Considering the way an ambulance must travel, when answering emergency calls, it seems a rather strange way to take care of three thousand dollars' worth of perfectly good property. Suppose that "bus" hits somebody? Will it in such an event prove an asset or a liability? Yet this is just one instance of neglect of hospital insurance.

BOILER PLANT INSURANCE

Every hospital of any size has a boiler plant for heating the buildings and supplying hot water. Do such boilers ever explode? They do and can make a bad wreck. The idea that only a boiler exploding at high pressure can do any damage is all wrong. I can give instances where persons have been killed and thousands of dollars of damage done to property. Some of the less expensive heating boilers are made with cast iron parts. Carelessness in operation will crack these and damage the boiler. In one case, which came under my notice it cost over five hundred dollars to make the boiler right. These people now pay $50.50 for a policy for three years, which includes loss from such a cause. It also covers damage to any property, either their own or that of others, and personal injuries resulting from an explosion. The value of boiler insurance does not lie alone in its payment of losses, but also in the inspection service which gives every boiler a thorough overhauling at least once a year. This serves to detect any defects before they have become serious, and affords a chance to take the proverbial "stitch in time." By furnishing advice about the care and operation of boilers it often saves money for the owner by lengthening the life of the boiler and increasing the efficiency of operation.

FIDELITY INSURANCE

Fidelity bonds can be had at such low rates that it seems wise to cover any persons in the hospital management who have to handle any considerable sums of money. Most persons are honest, but why should trustees lay themselves open to criticism by neglecting to insure against wrongdoing on the part of those employed by the hospital?

A book of expirations is probably the worst way to keep track of insurance policies. As policies expire and are renewed or changed the book becomes marked up and involved in hopeless fashion. A card index is much easier and simpler. All dead stuff is cleared out and only live policies remain on file, one card being used for each policy. The exact form of card is not material. It should give all the essential facts about the policy, date of expiration, number of policy, name of company, property covered and location, amount, rate, premium, term, form used (this can be a number referring to a specimen similarly numbered on file), and name of broker who placed the insurance. By the use of tabs or metal signals on the tops of the cards, each month's expirations can be seen at a glance. This is not as complex nor as difficult as it may sound. Where there are not many policies a space in the card files can be given to Insurance, and plain blank cards used to keep the record, each card giving the required information. The main thing is to have a shipshape record ready at hand for reference and not to have to dig up the policies from the safe deposit box when any question about them arises.

To carry adequate insurance costs money. It is foolish to try to pretend that it does not. The question for the management of every hospital to decide is whether they want to run along insured in a hit-or-miss fashion, covering this and taking a chance on that, or whether they want to handle their insurance with the same care and system as an up-to-date manufacturing plant, taking every measure to protect themselves against the hazard of the unforeseen catastrophe, and by insurance making the cost a fixed, definite amount in their yearly expenses and not a gamble with chance? If a loss takes place and the hospital has to face a payment of thousands of dollars, what explanations can the management give to those supporting it? "We didn't know"; "We took a chance": neither will pass for much of an excuse.

These are the salient features of insurance meeting the needs of a hospital. The various details of construction and equipment for prevention of fire or accidents, and safeguarding patients and attendants, could themselves be made subjects of lengthy articles. It has rather been my aim to show the need of system and accuracy in arranging insurance and the wisdom of carrying proper casualty insurance in the operation of an up-to-date hospital.

Arkansas' First Tuberculosis Clinic

The first tuberculosis clinic in the state of Arkansas has been opened at Little Rock. It will be under the direction of the Pulaski Anti-Tuberculosis Society. A plan has also been worked out for cooperation with the state university students in this work. A recent survey of the anti-tuberculosis work in Little Rock by Dixon Van Blarcom, field secretary of the National Association for the Study and Prevention of Tuberculosis, has proved a great stimulus to local work.

Twelve automobile ambulances have been given the Red Cross for use in the war zone by the students of Yale University. The students of Harvard have given five. Each ambulance is equipped to carry two wounded men.

FEEDING THE HOSPITAL—VARIOUS KINDS OF INSTITUTIONS[1]

Catering to the Tuberculous—Feeding the Children—The Insane Have Their Own Problem—Buying For and Feeding Eleemosynary Institutions—In Private Sanatoriums—Help in the Kitchen—Dietetics of the Future

By LULU GRAVES, Dietitian, Lakeside Hospital, Cleveland, Ohio

PROFESSOR MENDEL of Yale says, "Among the modern sciences that bear upon the everyday life of men, there are few which appear to meet with so little popular recognition as does the science of nutrition." This is very true in general, and more conspicuously true in our hospitals and other institutions where, in other departments, scientific work is not only recognized, but regarded as necessary.

The large majority of our hospitals have, until recently, given very little thought, effort or money to the planning or equipping of their commissary departments; and even now it is only a few that have done so. Visitors, or those who for any reason wish to see the hospital as a whole, or to observe the scheme of working in its several departments, are very seldom shown the kitchens. There is usually plenty of reason for being ashamed of the kitchens, yet I have never heard a good reason why this state of affairs should exist.

Institutions are known by the manner in which they prepare and serve food, just as individuals are known by their reputations for efficiency and morality. It is surprising that we get as good results as we do in the feeding of hospitals when the commissary department receives such indifferent attention. No one questions the importance of good food in a hospital; very few have any conception of the difficulties to be overcome in serving good food. I shall not go into detail in regard to the equipment of kitchens; the description of kitchen equipment published in the March number of The Modern Hospital was so excellent that it is unnecessary for me to discuss it further. I want, however, to emphasize the necessity for good stoves and good ice boxes.

The difficulty of cooking with a defective stove or oven, when feeding a large number of people at a specfied time three times every day, cannot be imagined by one who has never been through the experience. Psychologists tell us that persons employed about furnaces, large ranges or places where they work in a high temperature "are likely to become unstable in their disposition and intemperate in their habits." When, in addition to this, they are subjected to the annoyances of improper utensils or inadequate equipment, how much greater must be the effect on their disposition and habits, and incidentally, upon their efficiency. Food which is overcooked, undercooked or unevenly cooked is not palatable, and much of it is not easy of digestion; and this fact may result in great waste, which in time amounts to more than the price of a stove, not to mention the dissatisfaction that sort of food creates.

Adequate refrigerator space is very necessary to keep food at its best, all the more so where such large quantities are used that a long time is required for its preparation, which is done in a room at a comparatively high temperature. Artificial refrigeration has reached such a stage of perfection that even small hospitals find its use advantageous.

Good equipment and intelligent cooks are essential in the proper feeding of every institution, whether it be large or small, of limited means or well endowed; though the kind of food, methods of storing, and the cooking and serving are extremely variable in different institutions for people of the same class.

In a state or county institution the supplies are bought by a purchasing committee, usually at a per capita rate, for three months or six months at a time. As everything is bought in such large quantities it can usually be bought at lower prices and there is little excuse for purchasing goods of poor quality. Since they are to be kept for some time, it is not good policy to buy anything of poor quality. A large, dry, well lighted, well ventilated store room should be provided for the supplies.

While this method of buying makes it more difficult to have a great variety on the menu, it affords splendid opportunity for systematic control of the whole food problem. If it is not well controlled, however, there is great opportunity for waste. More or less waste is unavoidable from vegetable decay, shrinkage in the store room due to the large amount which must be kept on hand, or carelessness in the kitchen and store room. The majority of the people working in the kitchens of our institutions become so accustomed to seeing great quantities of food that they do not have the proper respect for small quantities. To them a quart of milk or a pound of meat is a trifling matter. The first criticism of my own management which reached me after taking up hospital work was the report of a nurse in the diet kitchen to

[1]This is the eighth and last of the series on "Feeding the Hospital;" last month, "Classes of People to Be Fed."

this effect: "Why, she won't even let us throw away a pint of milk, and the eggs that we break the yolks of, that can't be poached, must all be saved and used in cooking." This is a common attitude of nurses toward hospital property, and it is even more common in the kitchen force.

In the report of the dietary studies carried on in the institutions of New York City, it was stated that the kitchen force became interested in the experiments and a definite effort toward improvement was especially noticeable in cooking and caring for supplies in both the kitchens and dining rooms. The influence upon the chef and cook was most beneficial. This result can be attained in any institution and is particularly desirable in the smaller hospitals whose means are limited.

It is often assumed that the appetite may be taken as a measure of the amount of food required, but in many cases this is a very unreliable guide. Excessive eating is not only a waste of food, but it is injurious to health. Eating too little is also injurious, but the evil effects may be more easily remedied, provided the habit is not kept up too long.

In feeding the insane it is frequently necessary to regulate the amount of food allowed individuals; otherwise some patients would eat more and others less than they need. It may not be necessary to regulate the amount of food eaten by the sane, but in many instances it is advisable. The caloric method furnishes a pretty accurate estimate of the requirements of the average body, but it does not deal with the requirements of the individual. The averages, however, furnish a very reliable guide to the metabolist. There is a vast deal of work necessary in introducing this method, but once established it is comparatively simple.

A great many institutions of all kinds are estimating per capita cost. This is an excellent plan for obtaining general information and for comparison, but it cannot be taken as a standard. Such common food stuffs as butter, eggs and meat vary so greatly in price from year to year and in different sections of the country that the same amounts might not be equally feasible in the East and in the West; and in one year a given sum might not buy nearly as much as it would in another. It is possible to have a generous per capita cost and at the same time to feed the people in a very unsatisfactory manner, because of waste, lack of proper division of food stuffs, injudicious serving or fluctuating population.

The per capita ration is a very satisfactory method of estimating the quantities of food stuff required. The ration differs according to the people who are being fed; the allowance for the patients would not be the same as for the people working, but the menus are never the same for the two classes of people, so it is easy to have the two estimates. The allowance for one hospital might not be at all satisfactory in another, so a table of quantities could not be used generally, any more than one of per capita cost could; it is, however, the most accurate system with which I have had experience in providing quantities, and there is less waste and fewer left-over things to take care of.

These are a few of the general problems that apply to any kitchen in which the food must be prepared in large quantities; there are, of course, many specific conditions to be met in each individual commissary department.

FEEDING THE TUBERCULOUS

In tuberculosis hospitals the food should be given in smaller quantities and given more frequently. The patients must have not only enough food to nourish them in the normal way, but there must be enough to repair the damage done by the ravages of the disease. The food must be wholesome and the food materials in good condition; no green or over-ripe fruits or vegetables should be used. The milk should be clean and free from contamination of any sort right up to the minute the last of it is used; it should test not less than 3.4 or 3.5 percent of fat. Milk and eggs are used for tubercular people in comparatively large quantities, and it is especially desirable that they be carefully selected and cared for. No matter how good milk and eggs are, the patients are apt to tire of them; and it is not necessary that they constitute the chief part of the diet, though they must be used generously because of their high nutritive value and ease of digestion. Other foods may be used freely to supplement the milk and eggs. Green and fresh vegetables cooked with plenty of butter or cream sauce, or served with oil, furnish mineral salts and fat, and the bulk which is helpful in preventing constipation. Cereals well cooked and served with milk, cream, or butter are an excellent food for tubercular patients. Unpolished rice might well be used much more than it is. It has a nutty flavor which makes it more palatable than the polished rice, and is therefore more acceptable and has greater food value. The acids of fruit are stimulating to the digestion and the sugars add to the caloric value of the diet. All food should be simple—no rich puddings or pastries, highly seasoned food or combinations of sauces, wines, etc. It should be cooked in the manner that will make it easily digested and assimilated, in order that the digestive organs may not be taxed and that the body may not lose any of the food value.

The tubercular patient should not eat large quantities at a time. His comparative inactivity does not allow him to get the greatest good from his food if taken in this way and his digestive organs are apt to suffer from it. Light lunches, or some form of nourishment in the middle of the forenoon and afternoon are much better for him.

In the hospital where insufficient funds or lack of help makes these luncheons impossible, a glass of eggnog, a bowl of bread and milk, a cup of cocoa, a disk of junket, a plate of dates or figs, may be served at small expenditure of time and money, and any one of these is a helpful addition to the patient's diet.

FEEDING THE CHILDREN

Children's hospitals need a dietary similar to the one just outlined, except that vegetables and fruits should not be served in the form of salads. For the younger children all vegetables and fruits should be made into purées, strained, and meats should be chopped; but the older children should be given things which require chewing and should be taught to masticate them thoroughly. As in the tubercular diet the food should be simple, plain and thoroughly cooked; milk and eggs are necessary, and even more of the cereals, gruels, cream soups, etc., are desirable. With the children, too, serving smaller quantities and serving more frequently is essential.

The question of infant feeding is usually one that is decided by the physician in charge, and the preparations are apt to be according to formulæ furnished by him.

For that reason I shall mention only in a general way some of our more common preparations. Milk may be modified in many ways, with definite proportions of fat, sugar and protein according to formula, or with lime water or barley water in order to prevent the clotting of the casein into curds that are hard for the digestive juices to break up. Barley has glutinous properties which make it especially good for modifying milk. Chymogen milk is milk which is sterilized and then cooled to a temperature of about 104° or 105° F., and to which chymogen powder is added to coagulate the casein. The curd is then beaten until the clots have all disappeared; care must be taken not to heat the milk above 98° F. before feeding, or the finely divided particles will again form a clot. Chymogen action is much the same as the digestive step in the stomach caused by the action of rennin, and the separation of the curd by beating merely helps the action a little more. Peptonized milk and eiweiss milk are other forms much used in infant feeding; they have been discussed in a previous paper.

Horlick's, Nestlé's, Eskay's and Mellin's are some of the more common prepared infant foods in the market. Various individual merits are claimed for them by their manufacturers. For Horlick's it is claimed that full cream is added to the milk and malted grain; for Mellin's, that no cane sugar is added, but an extract of wheat is used, and malt; for Eskay's albumin food, that it is made from egg albumin and cereals. At the University of Illinois some pretty thorough tests of these foods were made by Miss Wheeler. She used white mice for the experiment and concluded that Mellin's and Eskay's are not capable of serving as an exclusive ration; one modification of Mellin's will satisfy the requirements of nutrition but not of growth. Nestlé's and Horlick's will maintain body weight, and growth is more rapid than normal. These artificial foods are helpful when used advisedly.

FEEDING THE INSANE

The hospital for the insane has a somewhat different problem. While the food of the insane must be plain and have a high nutritive value, there are some complications in serving not to be found in other places. The need for well prepared and attractively served food is just as great here as elsewhere. It is difficult with many of these patients to persuade them to masticate their food properly. Epileptics and the demented are inclined to bolt their food. Supervision of the dining rooms is almost imperative to overcome this difficulty, as well as to prevent wasteful serving, to see that some are not overfed, while the depressed and oversensitive eat too little. It is important that the dining room be well ventilated at the meal hour and that no disconcerting sounds or disagreeable odors reach the patients, as there are nearly always some who are likely to be affected by these external conditions more than rational persons would be. They may have delusions about their food which are difficult to overcome and which cause them to refuse to eat. There seems to be as yet no very satisfactory solution of the problem of feeding the demented who cannot be trusted with knives and forks. All too frequently their food is put into any sort of container that the hospital finds convenient and of little value if destroyed. Some infirm patients, because of their inability to masticate, may be able to eat only vegetables and fruits that have been strained, meats that have been chopped, and soups and other soft things. Their diet must necessarily be monotonous and there is all the greater need that it should be well cooked.

FEEDING CHARITY HOSPITALS

In the state, county or municipal institution, where the supplies are bought by a committee not

directly associated with the house, and are to last for a period of several months, it is helpful, provided the population is not too variable, to use the per capita ration as a basis in making out the order. In these hospitals it is imperative that there should be intelligent and judicious supervision of the commissary department. Otherwise, toward the end of the period for which supplies are purchased there will be a shortage of stock. Supplies should be given out by requisition only and there should be a definite system of drawing upon them so they may be used with approximate uniformity.

Mrs. A. P. Norton, at Oak Forest, Chicago, had a very satisfactory method of doing this. Menus were made out for three weeks, allowing for as great a variety as possible during that period; these were repeated, and any desirable change was made from time to time in minor things, such as fresh vegetables and fruits, as they came in from the farm or were ordered. In this way perishable things could be used as they were delivered, but meats and other things for which time was required in ordering could be kept in supply as needed. The butcher had a copy of the standard menu, knew whether the menu for the first, second or third week was being used, and could order his stock accordingly. This avoided a repetition of any one thing on the same day of each week, and the supplies in the store room were drawn upon according to the quantities available, thus making things come out even.

In these institutions the fare must necessarily be less expensive and of less variety than in the private institution. In the latter there is especially great need for a cook who can cook well and introduce variety in the way of seasonings or combinations of common food materials.

FEEDING THE PRIVATE SANATORIUM

In the private sanatorium and hospital the need for a heavy nourishing diet is not ordinarily so great as the need of an attractive, appetizing one. While many of the patients must be "built up" and must have nutritive food, they require greater variety, dainty service and generally less in quantity. Proper combinations of food, served, in so far as is possible in a hospital, in a novel and original manner, are most important. This does not mean that better cooks should be employed, for it is just as essential that the plainer foods should be well cooked as it is that the more delicate ones should be; but it means a greater number of employees. A small touch in the way of garnishing, or a tiny bit of an appetizing sauce added to a vegetable, salad or dessert, may represent an addition of a great deal of work in the preparation of that particular dish. High-class restaurants and hotels make much of these extras and the public has been taught to expect them, but these places provide every sort of machine or device for the preparation of fancy things; while in the majority of hospitals it requires all one's power of persuasion to get the necessary utensils and equipment for such work.

There is a strong tendency to overdo garnishing and decorating, and we often find that the efforts to lend a pleasing note have completely overshadowed the preparation of the article itself. To a sensitive person this is most displeasing, and our private sanatoriums have many sensitive and supersensitive people. Besides the extravagance of this habit, it sometimes leads to the substituting of a less valuable food material for one of greater value.

In order to serve its principal purpose, a sanatorium must be more or less remote from large cities, consequently it cannot have access to large markets. Unless, therefore, the sanatorium has its own source of supply, one's ingenuity is severely taxed to provide the desired variety. As the serving is done in a dining room, the situation is not so serious as it might be otherwise. One can often combine small amounts of meat, fish or poultry into chowders, omelets or casserole dishes; or, with vegetables, make them into ragouts; and, with the addition of white sauce, cream soups and bisques may be made from them. Vegetables and fruits may be used in fritters, salads and soufflés in an almost endless number of combinations. These things are possible where the service is almost directly from the kitchen, and the serving is at a table.

HELP IN SANATORIUM KITCHEN

In the sanatorium kitchen we find the problem of help different from that of the kitchens of other institutions, as either the civil service requirements, or inmate help, or both complicate matters. There are often times when the force is weakened by the absence of some of the number, and yet the meals must go out promptly; and the meal hour in all large institutions extends over a considerable length of time, so that there is little spare time between meals. Under the civil service rules no employee may be made to work an extra hour, no matter how great the need. The work in the kitchen begins at half-past four or five o'clock in the morning, and may not end until seven or later in the evening; so it is very necessary that enough people be employed to allow for relief.

I shall not consider the question of inmate help from the standpoint of the institution, or from the standpoint of other departments, but from the viewpoint of the kitchen. Inmate help is not competent, of course, and with the exception of the

preparation of vegetables and fruits, or some part of the cleaning, there is very little about the kitchen that should be left to such help. Infirm people cannot work rapidly enough to accomplish much in the kitchen; frequently they are not cleanly about their persons or habits, and should not work near the food. Very few of them do any work about the culinary department well; it is work with which, as a rule, they are not familiar.

DIETETICS OF THE FUTURE

In the "sphere of woman" there is no greater field for work than in the commissary departments of our modern institutions. There is much to be done, for the ground has not yet been fully prepared, and there is great need of its being done. No better laboratory for scientific work can be found, and in no place are results more satisfactory; there is pleasure in seeing a patient not only recover from effects of a disease, but learn so to control his diet in the future that there will be no recurrence of the disease. Of this type of work scarcely enough is being done as yet to mention; but it sets a standard for future work in dietetics. So many people are beginning to realize the value of this knowledge and are asking for it that we shall be kept busy answering them while waiting for the development of this work, which is coming "slowly but surely."

At a meeting of the American Association of Officials of Charity and Correction, held in Memphis, Tennessee, last year, a paper was read in which cooks and dining room employees were advised to take the same kind of course in dietetics as is given to nurses in some training schools.

I should like to quote from Dr. Mendel again, though he has set even a greater task than I have for the dietitian of the future. He says: "In breaking away from stolid empiricism and conservative indifference in matters of diet, we need not be blind to the valuable contributions embodied in the experience of generations of mankind. But when the physiologist has succeeded in some degree in interpreting or correcting this experience, it will become the duty of the dietitian and the physician to act as advance agents in the promulgation and the application of the newer knowledge in everyday life."

PAY PATIENTS IN ISOLATION HOSPITALS

New York Health Department Issues Important Order Based on Exhaustive Inquiry

The question of whether or not patients suffering from the communicable diseases should be obliged to pay for their care—if they can—in publicly supported special hospitals, has been a much mooted one for a long time. A good many health officers, Dr. George B. Young, of Chicago, among them, have insisted that these patients are not taken care of at the public expense for their own sake, but as a protection to society, and consequently should not pay.

A good many members of the medical profession insist that people able to pay should be made to do so, and that they should be permitted to employ their own private physician, who should be allowed the privileges of these publicly supported hospitals.

The New York Department of Health has recently made some exhaustive inquiries into this matter and has issued the following order for that city:

From time to time, public or private criticism is made of the gratuitous treatment in the hospitals of the Department of Health of patients suffering from infectious diseases.

In those municipal hospitals where other classes of patients are treated, it is now the accepted policy of the city to require the payment of hospital charges by those patients who, upon investigation, are found to be able to pay. Whether this latter policy may wisely be applied to infectious cases is a question.

There is a distinction to be made between patients suffering from infectious diseases and those suffering from other forms of disease; the former are not as a rule eager to become hospital patients, but their hospital isolation is, in many cases, desirable for the protection of the community. If the payment of a hospital fee were demanded as a prerequisite to admission, how many of these patients would be willing to enter a hospital? And, apart from the question of the willingness of the patients to pay, how many would be able to pay?

In order to answer this question, an investigation was recently conducted by the Bureau of Infectious Diseases. For a period of one month the diagnosticians of the bureau, when making arrangements for the admission of patients to the hospitals of the department, obtained information as to the financial status of the family; 163 families were thus investigated. In 39 cases the father was unemployed. Among the Manhattan cases, the average weekly family income was $10.71. No figures are given for Brooklyn because, in that borough, information concerning the family income was denied in all except six instances. Only two, out of 120 cases in which satisfactory information was obtained, were able and willing to pay. The highest weekly income reported was $26, this income was credited to a family consisting of two adults and six children.

It is evident that a very large majority of the patients treated in the hospitals of the Department of Health come from poor families. Patients in better circumstances either enter the Minturn Hospital or remain at home. There is apparently very little if any abuse of the hospital facilities provided by the city for the treatment of patients suffering from infectious diseases.

Kentucky's First County Hospital

From a list of thirty nominations, a board of trustees was appointed recently for the County Tuberculosis Hospital to be erected near Hopkinsville, Ky., which was provided for by a referendum vote last fall. This is the first county hospital to be provided for in Kentucky, and marks a significant step in advance. Under the law, it will be the duty of the board to select the site for the proposed hospital in cooperation with the State Tuberculosis Commission, to supervise its construction and to provide for its maintenance out of appropriations made therefor by the fiscal court. An appropriation sufficient to purchase the site will be available from this year's tax levy in December.

The imposing new home of St. Elizabeth's Hospital at Baker, Ore., erected at a cost of $200,000, is now occupied. The building is four stories high, and the exterior construction is entirely of granite.

THE HOSPITAL X-RAY LABORATORY—ITS SCOPE AND LIMITATIONS[1]

The Equipment—Examination Room—Machine Operating Room—Fluoroscopic Room—Demonstration Room—Photographic Dark Room—Maintenance and Roentgenologist's Privileges

By I. SETH HIRSCH, M. D.,
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EQUIPMENT

THE assembling of the equipment of an x-ray laboratory presents many problems. To the uninitiated the apparent difference of opinion among workers alone, based on their varied experience, is puzzling, and what with the manufacturers displaying a wide range of variety in devices intended to simplify the work, the problem of the selection of equipment becomes an exceedingly difficult one; for, who, indeed, shall decide, when experts disagree?

And yet, when analyzed, it will be found that the difference of opinion among workers is not so great, but that there is a striking identity of ideas among the worthiest representatives of this specialty. The assembling of the equipment of a laboratory is strictly the business of the roentgenologist, and neither the inexperienced layman or medical man is competent to perform the task, for there exists the possibility that price, polish or paint may appeal with greater force than insulation, commutation or efficiency. Nor does it take an extensive experience to teach that simplicity in construction and singleness of purpose is a desideratum in apparatus as well as men; in other words, that it is better to have an apparatus which does but one thing, and that simply and well, than one which serves many purposes, but serves none of them properly.

No attempt will be made here to give the details of the construction of the various apparatus nor to discuss the advantages or disadvantages of this or that particular type of machine or tube. The furnishing and equipment of the various rooms of a medium-sized laboratory will be discussed, giving just the working essentials.

EXAMINING ROOM

The examining room, being the room in which the plate examinations are made, holds (with the contents of the machine-operating room) the essential apparatus for the radiographic (plate) examination. It is necessary that this room contain at least one hundred and seventy-five square feet. The walls should not be painted black, as it unnecessarily increases the gloom of a room which must be kept partially darkened; they should be of a greenish tint.

Table.—The table should be low, not too narrow, firm, easily movable and capable of automatic stereoscopic plate shifting. In some of the tables on the market the table top may be raised vertically, and permits stereoscopic exposures in the vertical position. This is an undoubted advantage. Then, too, by means of a board hooked over its upper edge to which single plates may be attached, chest or stomach plates may be made in the vertical position.

Tube Stands.—There are numerous tube stands on the market, but the majority of them are either too clumsy or too flimsy. The mechanism of the stand should be simple, its movements smooth and easy, facilitating accurate and quick adjustment for stereoscopy. It should permit of gradual but firm compression and be sufficiently heavy to prevent vibration. The portion of the stand holding the tube should be of wood; the clamp should be capable of being simply and quickly adjusted so as to save time in changing tubes. When the service is entirely an outdoor one and patients are able to walk to the table, a tube stand permanently attached to the table may be convenient; but when it is necessary to make exposures of helpless patients directly upon the carriers in which they are brought to the department, the movable, isolated tube stand is most convenient, as it permits of ready adjustment over the stretcher.

This room should also contain a tube closet, the tubes being hung on curved wires fastened to its back. The doors of this closet, as of all other closets within the department, should be sliding. Another closet for holding cones, sandbags, head clamps, compression ball, loofah sponge, and other accessories; a small shelf in one corner for the fan; and a screen with chairs behind it, where patients can undress, completes the equipment.

Where there is much work to be done, the radiographic unit of tube stand and table may be duplicated. Thus, a plate holder, consisting of a counterweighted arrangement for holding the plate, may be added for upright chest and stomach examinations; and, if desired, a third unit, consisting of a small table for the examination of the

[1]This is the third and last of three papers on the x-ray laboratory of the large and small hospital.

upper extremities. When these units are ready for operation, the current of the energizing apparatus may be switched rapidly from one unit to another by means of a high-tension switch and the trolley system, and the work performed with celerity.

ENERGIZING APPARATUS

The machine-operating room is like the conning tower of a battleship, from which all the activities of the department are controlled. In it is placed the energizing apparatus. There are two forms of energizing apparatus commonly in use today for the production of the currents of very high potential to energize x-ray tubes. They are the induction coil and the so-called high-tension interrupterless transformer. An energizing apparatus sufficient to meet all the requirements of a general service should have such potential as to permit the making of a plate of the chest with the proper tube, without an intensifying screen, in such a fraction of a second as will give a sharp negative, without the necessity of requesting the patient to hold his breath.

There are several excellent varieties of interrupterless machines on the market. The most adaptable apparatus should be selected; a transformer with a variable induction primary is preferable, as it permits of a great orientation of the potential to the vacuum of the tube. Until recently the coil was the most commonly used form of energizing apparatus, but of late this has been replaced in most laboratories by a high-tension transformer of the interrupterless type.

In deciding the type of apparatus required for a laboratory the variety of the work must be considered. If the work is such that no speed in exposure is required, as for the head or bones, then a coil capable of operating tubes of high vacuum may be selected. An excellent coil may be purchased at one-third the price of a transformer. When, however, the service is large and general, and speed is required, as in the making of chest, heart or gastro-intestinal tract examinations, the transformer is preferable.

Through the lead-covered wall which separates this room from the adjoining examination room the high tension current is carried, by means of insulated tubes, to the trolley system in the examination room. With the aid of a lead-glass window easy inspection of the examining room should be possible. In this wall is also placed a megaphone for speaking to the patient in the examining room. All the lights of the examining room should be controlled from this room.

A desk and a lead-lined box with two compartments for holding plates complete the equipment of this room. In the opposite wall between this room and the dark room, a window with a solid revolving door should be placed, which will permit screen and plates to be passed in and out of the dark room without the necessity of entering.

FLUOROSCOPIC ROOM

The fluoroscopic room should be of the same size as the radiographic room. The lighting of this room is important and should be such as to permit the eye to become rapidly sensitized. The indirect or reflected lighting system, using an inverted bowl of greenish hue reflected from a white ceiling, and having the walls of a bluish-green color, gives sufficient light of the proper sort and rests and sensitizes the eye to the color of the cyanide fluorescent screen. The more rapidly the eye is sensitized the more accurate and speedy is the examination. In a room of this sort, as in the photographic dark room, where daylight must be excluded, artificial ventilation is essential by one of the many forms of ventilators.

Properly equipped and utilized, the fluoroscopic room is the most valuable adjunct of the x-ray laboratory. Not only does it make possible a rapid diagnosis, but it permits the rejection of normal material and saves much useless radiographic work. In gastro-intestinal and chest work this method of examination is indispensable.

FLUOROSCOPES

The equipment of this room consists of apparatus for examining patients both in the horizontal and vertical position. There are some fluoroscopic statives which are capable of such manipulation as to permit the examination of patients in both positions, but these are as a rule difficult to handle, clumsy, expensive and give insufficient protection.

Of all the apparatus in the x-ray laboratory the horizontal fluoroscope or trochoscope is perhaps the most important and useful. The trochoscope may be utilized not only for fluoroscopic examinations in the horizontal position, but also for plate work with the aid of a tube stand, the stereoscopic work being done by means of an attached tunnel plate holder which may be suspended from the side when not in use. In fact, in the small laboratory it is preferable to obtain and use such a trochoscope, with a hinged solid top, as the regular examining table.

There are many excellent vertical fluoroscopic statives on the market which embody all the requisites of protection, simplicity of movement and adjustment. These are more or less close copies of the original apparatus of this sort, designed and made by Rosenthal of the Polyphos of Munich. With the vertical apparatus, patients

may be examined in the standing or sitting position. The ideal energizing apparatus for fluoroscopic work is an induction coil operated by a mercury-gas interrupter, and the ideal tube is a properly seasoned one with a Bauer air-regulating attachment.

This room should also be provided with a lead-covered box of sufficient size to hold 14x17 plates. A dressing screen in one corner and a table for the bismuth preparation in the opposite corner, a revolvable chair, leaded gloves and glasses, lead-lined aprons, wooden spoons for palpation, complete the equipment of this room.

DEMONSTRATION ROOM

In the demonstration room are placed the illuminating boxes for the viewing of the plates, the Wheatstone stereoscope, the files and the office furniture.

The three varieties of plate illumination are:

1. By reflected incandescent light.
2. By transmitted incandescent light.
3. By the Cooper-Hewitt mercury vapor lamp.

The reflected light is superior and preferable to the transmitted light, but requires greater strength of illumination. In this type of light the reflecting back should not be too far behind the plate, while the source of illumination must be completely hidden from the eye.

When the transmitted light is used the plates should in no instance be placed in contact with the ground glass, but should be separated from this by a space of two or three inches. Where boxes are to be kept continuously illuminated the amount of current consumed is necessarily large.

The Cooper-Hewitt light, if properly shaded and not too bright, is by far the best light for viewing plates. For its equivalent candle power it is cheaper than the incandescent. It shows detail in shadows which is not to be seen with the ordinary illumination.

The Holzknecht revolvable box may be arranged both for transmitted incandescent illumination or for the mercury lamp. It occupies but small space and permits the inspection of six of the largest plates.

PHOTOGRAPHIC DARK ROOM

It is as much an error to make the photographic dark room too large as it is to make it too small. The importance of ventilation cannot be overemphasized. It is not essential that the developing be done by the dim glow of a single carefully shaded bulb, for it is the quality of the light and not the quantity which is important. The illumination can be improved by orange-colored painted walls. No open shelving should be permitted to exist, and all closets should have sliding doors.

The developing tables and tanks should be of Alberene stone. The developing is done with the aid of a water motor tray rocker on the stone table to the right of the system. The plate is then washed in the sink and transferred to the grooved compartment containing the fixing bath and then to the left of the partition in this tank, into the water, where it is washed and then transferred to drying racks, also of Alberene stone, placed on the table at the extreme left. Thus the entire operation is carried on progressively from one side of the room to the other. The wall in front of this system is also covered with stone into which windows are cut for the insertion of

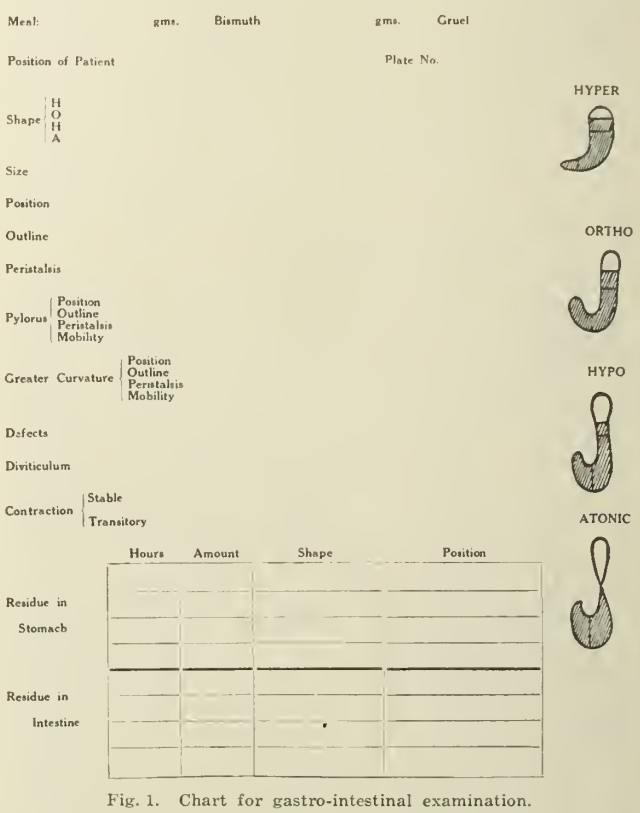


Fig. 1. Chart for gastro-intestinal examination.

ruby glass behind which receptacles are provided for incandescent lights.

On the opposite side of the room is to be placed the closet for holding unexposed plates and envelopes and intensifying screens, and a table for loading screens and plates.

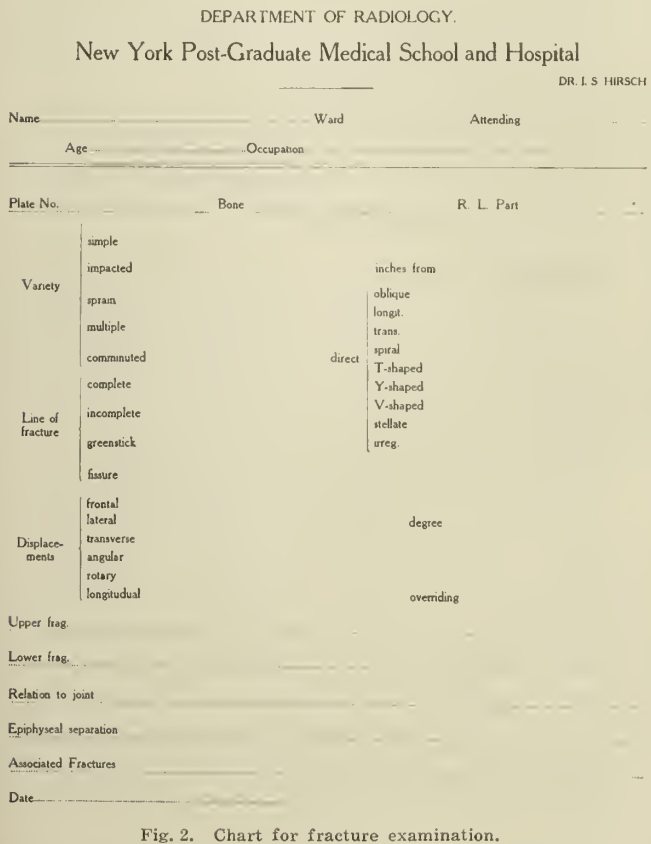
The plans of the equipment above outlined may undergo considerable amplification in order to meet the requirements of large laboratories. Duplication of rooms and apparatus then becomes necessary in order to permit a large staff to work.

MAINTENANCE

It is the undoubted aim of every institution that its department shall be self-maintaining. This is indeed possible in institutions having large private pavilions where a fee for such extra examina-

tions can be made. There are, however, relatively few institutions where it is possible to obtain sufficient income, with the result that the hospitals encourage their staffs to refer to the department outside patients from their own private practice.

The question then arises, has the hospital a right to engage in private practice, or should its activities be confined to patients treated in its wards or dispensaries? As an isolated, bold proposition this admits of but little argument. For it is generally acknowledged that an endowed institution has no privilege to do this. On the other hand, if the roentgenologist benefits by this arrangement in much the same way as the attending surgeon or physician does by the admission to the hospital of patients into his service, then it cannot be denied that it is his right to accept such work. However, this has been corrupted into a practice by which the hospital employs its roentgenologist at a fixed salary and reaps the benefits of his labors and credits to itself any surplus. This is obviously unfair, and is but one of many problems of this kind which must be solved by cooperation between the roentgenologist and the institution.


DEPARTMENT OF RADIOLOGY.

New York Post-Graduate Medical School and Hospital

DR. I. S. HIRSCH

Name ... Ward ... Attending ...

Age ... Occupation ...

Plate No. ... Bone ... R. L. Part ...

Variety: simple; impacted; spram; multiple; comminuted

Line of fracture: complete; incomplete; greenstick; fissure

Displacements: frontal; lateral; transverse; angular; rotary; longitudual

direct; inches from; degree; overriding

oblique; longit.; trans.; spiral; T-shaped; Y-shaped; V-shaped; stellate; irreg.

Upper frag. ...

Lower frag. ...

Relation to joint ...

Epiphyseal separation ...

Associated Fractures ...

Date ...

Fig. 2. Chart for fracture examination.

No attempt at thoroughness and completeness in all details has been made in this article. It has been the object of the writer not only to point the way to a realization of the importance of the x-ray laboratory in the modern hospital, but also to show the difficulties of the task which confronts the roentgenologist, and to plead for a better appreciation of his efforts and the value of the service he renders as a soldier in a large army of medical men who are fighting for the welfare of humanity.

The two forms shown are convenient for tabulating the results (1) of gastro-intestinal examinations; and (2) of fracture cases. These forms are the result of a large amount of composite experience.

Additional Red Cross Nurses Assigned to France

Ten additional enrolled American Red Cross trained nurses, each one American born, sailed for France from New York on the S. S. Rochambeau Saturday, February 20. Nine of them were detailed on important work at Yvetot and one went to Paris. Six of the ten speak French.

The names of the nurses sent to Yvetot, their home addresses and the hospitals and schools with which they have been identified, follow:

Miss Virginia Anderburg, New York City, graduate Presbyterian Hospital, New York; Miss Josephine Ashmead Clay, the Margrave, 20th and Chestnut Streets, Philadelphia, Pa., graduate of the University of Pennsylvania Hospital; Miss Helen M. Spalding, 147 Pierrepont St., Brooklyn, N. Y., graduate Long Island College Hospital, and connected with the Brooklyn Department of Health; Miss Mary M. Fletcher, Virginia Military Institute, Lexington, Va., graduate Allegheny General Hospital, Pittsburgh, Pa., and formerly Superintendent Martha Jefferson Hospital, Charlottesville, Va.; Miss Mary K. Nelson, Highland Hospital, Fall River, Mass., graduate Union Hospital, Fall River, and Superintendent of Nurses, Highland Hospital; Miss Margaret H. Patterson, 1830 6th Ave., Birmingham, Ala., graduate Asheville Mission Hospital, Asheville, N. C.; Miss Frances F. Van Ingen, 311 Cumberland St., Brooklyn, N. Y., graduate Brooklyn Hospital, formerly head nurse, surgical ward, State and County Hospital, St. Paul, Minn., anesthetist; Miss Matilda Jane MacCracker, Protestant Episcopal Hospital, Philadelphia, Pa., graduate of that hospital, supervisor, women's ward; Miss Marion McCune Rice, Battleboro, Vt., graduate Pennsylvania Hospital, head nurse, Pennsylvania Hospital, specialist in suture work.

The nurse detailed for Paris is Miss Katharine Lilly, Rockefeller Foundation, 61 Broadway, New York City, a graduate of Lakeside Hospital, Cleveland, Ohio. Miss Lilly will assist Dr. Alexis Carrel, of the Rockefeller Institute, who volunteered his services to the French government at the outbreak of the war. Dr. Carrel has been detached from the hospital at Lyons, where he was first detailed and placed in charge of a hospital at Compiegne, near the northern line of battle. In addition to the regular surgical unit the Compiegne hospital is to have a staff consisting of bacteriologists, chemists and technicians, forming a laboratory unit.

Miss Jeanette F. Duncan, superintendent of the Delaware Hospital, Wilmington, Del., has been granted leave for six months and will join the McGill Military Hospital for service near the battle front in France during the summer. Before sailing Miss Duncan will take training in military routine with other nurses at Montreal.

The MODERN HOSPITAL

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OTHER IMPORTANT INFORMATION ON PAGE 34, ADVERTISING SECTION

Organization and Administration of Hospitals for the Insane

Hospitals for the insane are generally controlled by the state and administered by permament officials under special laws which differ widely from those which govern corporate or municipal hospitals. Patients who are placed in them for treatment are also detained, as a rule, for much longer periods of time and often require for their successful treatment methods of personal control, and facilities for occupation and re-education which could not be secured in other hospitals.

I have accordingly at the request of my associates of THE MODERN HOSPITAL arranged a series of papers covering these and other aspects of the special work of State Hospitals for the Insane. They relate to medical and business organization, methods of purchasing supplies, the organization of domestic departments, occupations and industries and training schools for nurses, also an account of the care of mental cases in a special ward of a general hospital.

The first paper, which appears elsewhere in this issue, describes the usual methods of control over institutions generally exercised by the state through boards of management variously constituted.

Owing to the remarkable development of the medical service in state hospitals of New York, it has been thought wise to secure a detailed account of the methods there employed, and the second paper has been kindly supplied by Dr. William Mabon, formerly president of the New York Lunacy Commission, and for several years past medical superintendent of the Manhattan State Hospital.

A third paper, relating to the organization and especially to the business organization of a large hospital, the Buffalo State Hospital, has been furnished by Dr. Arthur W. Hurd, for many years its superintendent.

A fourth paper, on methods of purchasing supplies for the hospitals of Maryland, has been written by Dr. Arthur P. Herring, of Baltimore, secretary of the Commission in Lunacy and also of the Maryland Cooperative Purchasing Committee.

The fifth paper, on the organization of domestic departments, has been supplied by Dr. A. H. Harrington, of the Rhode Island State Hospital, former medical superintendent of Danvers (Mass.) State Hospital, and later of the New York Eye and Ear Infirmary.

A sixth paper, on the therapeutic diversional and economic effects of occupations and industries upon patients, has been prepared by Dr. Henry P. Frost, of the Boston State Hospital at Dorchester Center, Mass.

A seventh paper, on the organization and methods of training schools for nurses in a hospital for mental diseases, has been supplied through the courtesy of Dr. E. N. Brush, the superintendent of Sheppard-Pratt Hospital, near Baltimore, by Cora McCabe Sargent, the efficient and successful superintendent of nurses at this institution.

The final paper, by Dr. J. Montgomery Mosher, of Albany, New York, gives an interesting and instructive account of the methods pursued in the psychopathic wards of the Albany General Hospital.

These papers, being prepared by persons possessing expert knowledge acquired by long observation and varied experience, may confidently be regarded as the latest expression of the views of experts in matters to which they have given long and painstaking study.

HENRY M. HURD.

Time Waits for an American Spa

The outbreak of the European war found thousands of American invalids seeking cures in the spas, water cures and health resorts on the continent; many of these sick people suffered hardships in getting out of the war zone; some of them were seriously hurt, and undoubtedly some of them died as the direct result of exposure, shock and excitement.

The tragic incidents of that period and the coincident feeling that came upon us all that Europe's diversion into a period of chaos meant that in so far as the people of one country could be independent of the people of another, this country should fortify itself by the creation of all that we may need for our own well being, against a repetition of the situation that confronted us immediately after war was declared, and that confronts us today.

We began to inquire into our own enormous undeveloped resources, and among other items we found that in so far as Nature was concerned, our mineral waters were as various and quite as efficacious for the cure of the sick as were those of the celebrated "cures" of the European continent.

Many of those interested in mineral waters and "resorts," having arrived this far in their analysis, began immediately to exploit their springs and their environment, and to plan various advertising campaigns to get the people to accept them in substitution for the ages-old "cures" of the old world. But these folks had not looked far enough or deep enough; they saw only the waters and the forms of diversion that go with them.

If they had gone deeper they would have found that a vast majority of the invalids who have visited the European spas have done so on the advice of their physicians here at home, and if they had gone still farther they would have discovered that our home physicians were thinking far less of the waters themselves, in these far-away Meccas, and far more about certain other items of value that have caused the medical profession in this country to give ungrudging recognition of the value of these overseas resorts. These items are (1) that patients far away from home can be brought under better control as to the routine of their lives, eating, drinking, sleeping, exercise, than where the old associations are pulling them always into habits that have aggravated, if indeed they have not actually caused, the disorders from which they have suffered; (2) that in the evolution of time in which these older resorts have participated, there have grown up about them groups of medical men highly trained in their profession, and who have surrounded themselves with all the essentials to the diagnosis and treatment of the diseases for which their waters were originally supposed to be a cure, and with all the auxiliaries of treatment.

The result has been that these men, working usually under governmental protection and patronage and financial aid, have taken places at the very top of their profession, until now, and since the era of scientific medicine began, it has been to these men, and to their control of patients, and to their scientific equipment, that the American profession has been sending $30,000,000 worth of patients annually, and only incidentally to the mineral waters.

If our American spas, or any of them, are to fall heir to the popularity and prestige and patronage of those in unfortunate Europe, it will be because of like conditions that will have become a part—the chief part—of their virtue.

First of all there must be medical men, morally clean, scientifically at least abreast of the literature of the day, not the literature of one disease, or a single group of diseases, but the literature that appertains to the diagnosis of all diseases, men who have had experience enough to be able to apply their knowledge at the bedside and in the laboratory, and whose spoken and written words will command the respect of the American medical profession, as promising a high order of scientific skill for whatever patients may be sent to them.

Good laboratories, capably manned, scientifically conducted dietary, skillfully directed and thoroughly equipped x-ray departments—these, with good bath equipment as one section of a complete department of physical therapy; and all these in turn predicated on a high moral tone in the community—and then proper, dignified publicity that will call the attention of the medical profession to what is being done, will spell the permanent and splendid success of an American mineral springs or health resort, and no other way will do so.

Speech-Making to the Poor.

The writer of this editorial had occasion recently to address a large gathering of women in one of the "mission houses" at the edge of the ghetto district in a large city. There were hundreds of the poorer women of the community present, nearly all of them having with them one or several children.

The good sisters in charge of the mission had found it almost impossible to persuade the women of the neighborhood to go to a hospital for their confinement, and they wished someone to talk to the women about the advantages of the hospital as against the home.

The privilege of talking to these women under almost any conditions and on any topic that concerned their health and welfare would have been a liberal education to a critical student, but to meet them intimately on the subject of their very special troubles and perplexities concerned in the childbearing state was an inspiration.

The look of eager wonder on their faces when they were told that a large proportion of the blind

were made so at birth because of the ignorance, filth, and carelessness of the persons who presided over their entrance into the world, had a world of meaning in it; they had never heard that before.

When the chronic invalidism of poor mothers following confinement was explained to them as having been caused by the same sort of bad service, there was a responsive nod or head shake from almost every woman present, and by this time in the talk they could scarcely keep silent; each one had a story to tell, and she wanted to tell of her own case, either to the speaker or to the woman who sat next to her, and the meeting almost came to a temporary suspension on account of the murmurings and whisperings, accompanied almost invariably by the gesticulations peculiar to people who have not a large vocabulary.

When they were told what good hospital service consisted of to a woman at the time of her confinement, and that it should cost nothing to those who could not pay, and no more than home care to those who could, the women were plainly impressed.

It seems a pity that we, whose work is largely among the poor and the dependent, should always assume that these people are also as ignorant and incapable of thinking as they are of making their way prosperously in the world. Personally, I have found it quite as profitable to argue with the people of the ghetto, provided language is used that they can understand, as with better educated persons.

Hospital and social workers should try to measure their talks to these people to their ability to understand, and, if they fail to make an impression, I wonder how much of the failure is due to the speaker's incapacity to "size up" his audience.

To Carry Out the Harrison Law

In the Query and Answer columns of this issue will be found a letter from the commissioner of internal revenue on the application of the Harrison law to graduate nurses on private duty. This decision of the commissioner was based on an inquiry from Miss Tufts, of Farmington, Me., whose letter is also reproduced.

It looks as though, under this decision, graduate nurses will be forbidden "to have in their possession" any of the "habit-forming" drugs, and that the nurse must secure from the physician in attendance a sufficient quantity of these drugs to carry her through one case and she must return to the physician what is left after the case is over, and she must obtain a similar supply with each case upon which she is detailed. It may be possible that the commissioner will amend this regulation if it is found not to work well.

In another column also, will be found correspondence between the commissioner of internal revenue and THE MODERN HOSPITAL concerning the execution of the law in hospitals, including a form suggested to the commissioner by THE MODERN HOSPITAL and approved by him, which would seem to meet the requirements of hospital administration. The correspondence is important, covering a most important topic, and THE MODERN HOSPITAL wishes to compliment the commissioner of internal revenue on the receptiveness of his important office for the easy furtherance of the purposes of a law that comes so opportunely for the benefit of great masses of the people.

At best, this law is going to be difficult to carry out, and it must work temporary hardship in a thousand directions. Communities everywhere must shoulder a vast responsibility in the control of these drugs, pursuant to the letter of the law, and it is only by a facile and tentative course that the commissioner can carry it out at all.

It seems that the government, in congress assembled, has passed a law that will bear very hard on a most unfortunate class of people, and the government has made no provision to meet the emergency on its own account; indeed, it seems that the treasury department has refused the use of the marine hospitals of the country to care for a part of the vast number of people who must be treated and cured of the drug habit, and has thus thrown upon private philanthropy and community enterprise the whole burden of the execution of the law.

Let us not complain, but let us rather welcome the law as one that must mean untold benefit to the people if its whole purpose can be achieved.

Special Feeding of the Sick

The special feeding of the sick is receiving some attention in modern hospitals—but not enough. For some months THE MODERN HOSPITAL has been trying modestly to develop this feature of hospital administration. The papers of Miss Graves on "Feeding the Hospital" were solicited and secured as a part of this propaganda, and Miss Graves has given us a splendid series of papers on food problems, from the administrative viewpoint.

Then we persuaded Mr. Street to write on the laboratory, chemical and physiological side of the subject, in the hope that medical staff members of hospitals would be stimulated to set the machinery in motion in their institutions so that they could do real, scientific work with their cases. Mr. Street's papers were prepared with great care, and their preparation involved much painstaking labor; and in some exceptionally well in-

formed quarters they have been received with enthusiasm and commendation.

But in the whole country how much actual scientific work is being done in this field, and how many clinicians are studying their cases in a workmanlike manner? A truthful answer to this question, if it could be had, would be a sad commentary on the everyday application of well known and plentifully demonstrated facts regarding metabolism and the efficacy of special feeding in certain diseases.

It is the carefully considered opinion of this particular writer that the fault for this state of things lies, not at the door of the hospital administrator, nor at that of the hospital dietitian, but that almost the whole blame rests on the medical men in the hospitals, who should be leading and directing this work, but who are not doing so.

There is hardly a 50-bed general hospital in this country today that cannot boast the presence in the institution and on the payroll of a dietitian. The fact that there is someone on the job with that title shows the attitude of the board of trustees and the superintendent in the matter; and the fact that these dietitians are tenacious of the title, and that they are doing something to justify their positions, is sufficient evidence, it would seem, that these women would welcome the activity of the medical men in the institution, and as one of them, commenting on her own situation said recently, "I would work my fingers' ends off and study until my head swam if our doctors would start something for me to do." And yet I have heard medical men in these same institutions excuse a most inadequately worked up case on the ground that they could get no cooperation on the part of the hospital in their special feeding work.

The whole trouble is that not one clinician in a hundred has even a rudimentary knowledge of the physiology of the digestion, the chemistry of the food, the laws of metabolism; and not one physician in a thousand cares as much as he knows.

It is becoming more and more the duty and responsibility of hospital boards and superintendents to demand something more than money grubbing at the hands of their medical men, and this problem of the special feeding of the sick is a good place to begin.

To Boards of Trustees

Most business men realize that quality of work is better than quantity, especially when the work requires brains and technical training.

There is to be a great hospital convention in San Francisco this year, from June 21 to 25. The leaders of hospital thought in this country will be there—men and women who have been conducting successfully their institutions. A splendid program has been arranged, and the discussions will cover almost every phase of hospital activity, architecture, equipment and administration.

Your superintendent, in attendance on this great gathering, will get a pleasant and most needed rest, will acquire invaluable information for your hospital, and will return home a far more efficient servant of the hospital than he or she ever was before.

A good many superintendents, quite ready to ask you for money to spend for the betterment of the hospital in any one of a thousand ways, are diffident about asking for money to pay for a trip for themselves, and unless the question is raised by others, will not present it to your board. And yet there is no money that you could spend that will bring you in so great return in efficiency.

Don't you think you would better suggest this convention to your superintendent, and relieve him or her of a rather delicate dilemma? It would be nice for your board to pass a resolution assigning your superintendent to this convention, and appropriating the money to pay expenses.

Ambulance donated the American Red Cross Society in Paris.

A Luxurious War Ambulance

Mrs. Barclay Warburton, of Philadelphia, recently raised the money, in connection with the Emergency Aid Committee, of Philadelphia, for an automobile ambulance and it is now on the way across the water as a gift to the American Red Cross Society in Paris.

The car was made by the Autocar Company, near Philadelphia, and is perhaps the completest hospital ambulance ever built, containing water tanks for hot and cold water, a complete hot water heating apparatus, drawers and compartments for medical and surgical supplies and instruments. It has room inside for six wounded men in hangers and for eight who may sit in comfortable chairs.

A $750,000 hospital is to be built at Canton, China. Dr. Lew Chee, of Pekin, a graduate of Jefferson Medical College, has been inspecting the hospitals of the United States and getting pointers.

THE CHILDREN'S HOSPITAL OF VIENNA[1]

Institution Presided Over by Professor Pirquet Is a Splendid Example of Modern Child Care—Some of Its Departments

The University Children's Hospital of Vienna, built in 1911, is under the direction of one of the foremost pediatricians in the world, a man well known on this side of the water, Professor Von Pirquet, who has as assistants a dozen of the best men in Europe, men trained in all the celebrated clinics. Hence it goes without saying that the hospital can boast the very latest and most approved methods of practice and the best equipment to be found anywhere.

The hospital (Fig. 1) covers a space of 3,741 square meters, and cost $340,000.00. It consists of one spacious building four stories high and two pavilions, one of which is named the Escherich Pavilion, after the man who planned the institution, but who did not live to see his dream realized. The other is named after Professor Widerhofer, the great pediatrician of the St. Anna Spital.

Fig. 1. Exterior view of the Vienna Children's Hospital.

The hospital is divided into the following nine stations: (1) Saüglings, or Infant Station. (2) Tuberculosis Station. (3) Internal Diseases. (4) Diphtheria. (5) Scarlet. (6) Box or Isolation Station. (7) Medicopedagogical. (8) Pharmacologic. (9) Newborn Station.

There are also the radiographic and the cardiographic stations, a dispensary with special rooms for surgery, orthopedics, nose, throat and eye cases; and there is a small laboratory off of each station, as well as a general laboratory with chemic, histologic and bacteriologic departments.

INFANT STATION

This station consists of five rooms connected by doors leading from one to the other. There are also separate entrances from the outside to each room, so that it can be entirely isolated if necessary. The station is provided with a bathing room, a small laboratory, and rooms for attending and wet nurses. In addition to these there is an ordinary kitchen upstairs and a milk kitchen downstairs.

Two of the five rooms are kept only for cases of an infectious character, such as tuberculosis and syphilis, the other three being set aside for general diseases. Of the rooms, which are of unequal dimensions, the larger contain four beds each and the smaller two. The floors are covered with linoleum; the lower half of the walls with porcelain wainscoting. In each room there is a stove used for heating whenever the heat from the basement is insufficient. The large rooms are supplied with a small writing desk, a box for drugs, and a combination table and cabinet. The table is used for the examination and treatment of children (the opening of abscesses and the like). One compartment of the cabinet beneath the table is used for gauze, cotton, catheters, etc.; the other is used for charts, writing paper and other record material. The beds occupy the four corners of each room. They are placed about eighteen inches away from the radiators and the same distance from the windows.

The beds are of iron, and above each is an iron rod for a curtain against flies and light. Suspended from the center of the rod is a long silk ribbon, red if the disease is infectious, blue if it is not. Playthings are attached to the ribbons, not only for the child's amusement, but as a barometer of the patient's condition.

Under each bed is a white enameled pail for the patient's stool, which is to be left for the inspection of the physician. Beside the bed is a white metal case with glass windows, which contains all articles for the patient's individual use.

This case has three shelves, which contain, on the lower shelf, a small oil cloth used when the child is taken for examination, a diaper, to spread over the cloth for examination, and a bathing cloth; on the middle shelf, three bowls, the smallest for washing the eyes, the other two for the body, and a brush; on the upper shelf, three medicine glasses, a small dish containing glass rod for salve, and a nickel-wire tongue depressor, a nipple holder and nipples, a box of lanolin, and a box of powder. Inside of each case is a small thermometer in its holder. (Fig. 2.)

Fig. 2. Bed in one corner of larger room of infants' station, showing the divided curtain, the pail for stool and the case which contains everything the child needs.

In addition to the ordinary beds there are two incubators for prematures, consisting of ordinary bathtubs

[1]THE MODERN HOSPITAL is indebted for the material in this paper to the Archives of Pediatrics, New York, and also for the courteous loan of the illustrations. The author of the paper is Dr. A. Levinson, Stellvertretender of the Hospital.

Fig. 3. Bathing slab, with douche nozzle and apparatus for regulating the temperature of bath water.

with double walls, the space between to be filled with warm water. The water is changed often enough to maintain the required temperature, as shown on an attached thermometer.

The bathing apparatus shown in Fig. 3 is a double one—an ordinary bath tub, and a larger apparatus for giving showers.

The chart system used in the infant station is quite unique. Besides the main history and examination chart there are special charts that trace the course of the disease. Various signs and colors serve as symbols. The character of the stools is marked down by signs, | = normal, / = pulpy; : dyspeptic, ω mucus, — fluid, |=| = soap-stool. The nourishment is marked by colors: red indicates mother's milk; blue, cow's milk; yellow, eiweiss; brown, carbohydrates; black stripes, soup; globules, fat; green, vegetables. The volume of nourishment is written in one line, the corresponding calories in the next line, a ready table being used for that. The same chart contains the temperature, the tuberculin reaction, and any medication administered or any operation performed. Thus one glance at the chart is sufficient to give one an idea of the temperature, the weight, the diet, the stool, the tuberculin reaction and the general condition of the child. The doctor making rounds does not have to go to the trouble of reading the handwriting of different people. The colors tell the whole story. (See chart, Fig. 4.)

Although there is no one special rule for feeding infants, each case being treated according to its indications, there is a certain method which is followed in the infant station of the Von Pirquet Hospital. Two or three wet nurses are kept on hand all the time (Wassermann being made on them before they are admitted). They nurse their own children and the milk that is left in the breast is withdrawn by pump and given to the other infants. The premature infants are taken care of first and what remains is given to the others. In addition to the immediate supply of mother's milk supplied by the wet nurses, there is a supply of conserved woman's milk made up in accordance with the method of Meyerhofer (½ cc. H_2O_2 to 1 liter of milk). Infants that are not fortunate enough to get as much mother's milk as they need receive a modification of cow's milk, the formula being figured according to the caloric value, taking as the standard Heubner's rule. The carbohydrates are, for the most part, in the form of Nährzucker, the use of other forms, such as Keller's malzsuppe or phosphotine, depending upon the condition of the stool. Infants that do not do well on diluted milk, or cases of intoxication, are given Finkelstein's eiweissmilch prepared at the hospital. Seldom is larosan or other modifications of eiweissmilch used. The terminology used in intestinal disturbances is that of Finkelstein.

NEWBORN STATION

When does the obstetrician discharge the newborn from his care and give it to the pediatrician? In other words, at what age is the pediatrician to begin treating or looking after the child? This question has been solved in the Vienna hospital. Professor Schaut, of the obstetrics department, and the late Professor Escherich recognized the fact that the newborn child, with all of its characteristics and peculiarities, belongs in the realm of pediatrics, and it

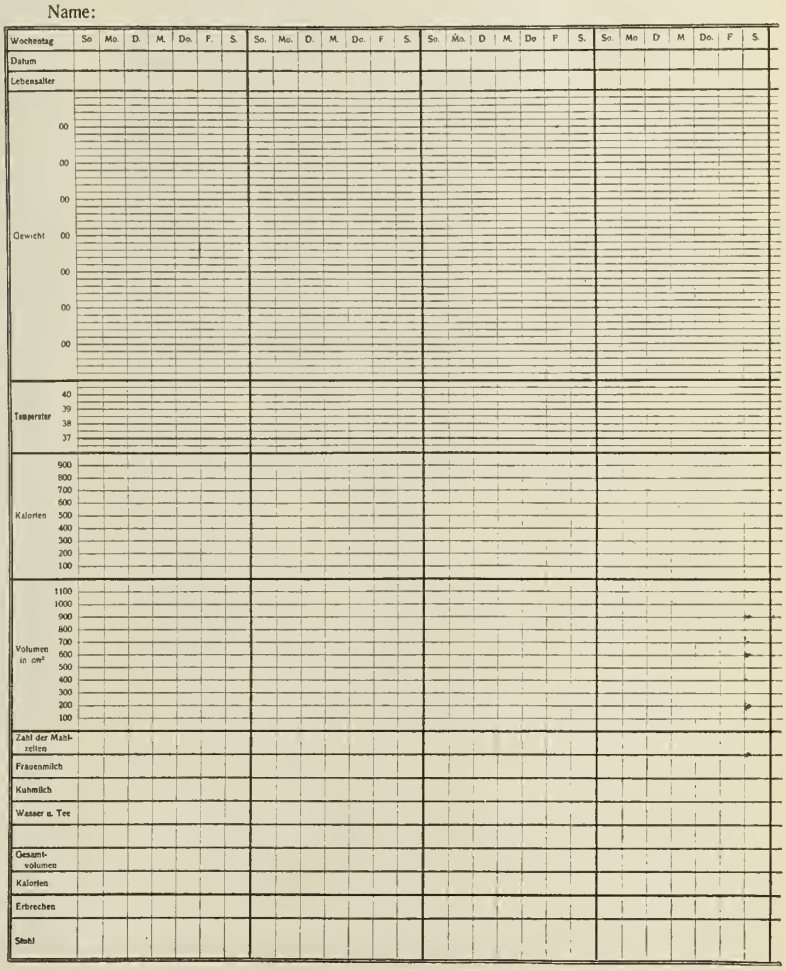

Fig. 4. Reduced facsimile of the chart used in Prof. Von Pirquet's wards. This shows at a glance the weight and the temperature curves, the calories in the food, the volume of food, the number of feedings, the kind of food and the occurrence of vomiting and stools. By a system of characters and the use of colored inks, the physician can tell at once just what the child has received and his condition.

Fig. 5. Outside corridor in box station. The nurses have access to the boxes through doors opening onto the corridor.

behooves the pediatrician to take care of it when it is sick and to study its physiologic characteristics when it is well. The best time to begin, then, is directly after birth. Recognizing this fact, they established a newborn station in the Frauenklinik under the direction of a pediatrician who makes newborn children his specialty. The newborn station, although not located in the same building as the infant station, is considered part of the children's clinic. A large amount of material is available, approximately 70 cases a week. The infants are put in a square wire basket attached to the bedside of the mother. In case of infection, however, the children are isolated in special rooms. The infants are observed daily. Physical, chemical and bacteriologic examinations are made and a good deal of information gained thereby, studies having been made in this department on icterus neonatorum, albuminuria, sepsis and many other abnormal conditions.

Newborns that have been in the station for ten days and are still sick are transferred to the Saüglings (Nurslings) Stations, where their treatment is continued.

THE ISOLATION OR BOX STATION

How can we avoid the transmission of infection from one child to another? This has been the great problem in all children's hospitals. Patients affected with the same disease can safely be placed together, but what is to be done with the cases where no positive diagnosis can be made? Isolation answers the question, but is it possible to have an isolation room for each child? As soon as you put two in the same room you expose one to the other's disease. Even where the diagnosis of an infectious disease is clear, who knows if there is not a combination disease; if the child with diphtheria who coughs is not going to develop measles or whooping-cough and infect others?

This big problem has been solved to a certain extent in the Wiener Kinderklinik by means of the Box or Isolation Station. The station consists of twelve glass compartments, or boxes, that fit air-tight into iron frames securely attached to the ceiling and floor. (Fig. 5.) Each box is 2½ meters wide, 4½ meters long and 4 meters high. One side of the thick glass serves as a wall for one box and the other surface as a wall for the next one. Adjoining each three boxes there is a service room where the medical supplies and operating tables are kept. The twelve boxes are arranged in two rows separated from each other by a distance of 2 meters. The intervening space serves as a passageway and makes it possible for parents and students to view the patients without coming into contact with them.

Each box contains a heating apparatus, an iron case for the patient's laundry, brush and comb, a stethoscope, gowns for physicians and nurses, hand solutions and towels. One nurse can attend the patients of all the boxes. All she has to do is to put on a new gown as she enters the box, and to wash her hands as she leaves it, leaving her gown behind, of course. As a rule, however, there are two or three nurses on each side to facilitate service.

The advantages of the box system, which are many, can be summarized into the following points:

(1) Complete isolation can be carried out without the need of much space.

(2) Two cases having two different diseases may lie in adjoining boxes without the transmission of infection. (In this hospital not more than one or two cases a year are carried over from one box to another.)

(3) Many patients can be attended by one nurse, as they can be watched through the glass walls.

(4) Parents can see their children and speak to them and yet not come into contact with them.

(5) Teaching can easily be carried on.

(6) A patient with one disease may leave the box and a patient with a different disease may be brought in an hour later without danger of transmission. All that is necessary is that the floors be wiped and the walls, which are of glass, be washed in an antiseptic solution, something that cannot be done in a room with painted wooden walls.

Fig. 6. Corridor running between cubicles of box station. Parents and students may see the patients without coming into contact with them.

THE MEDICOPEDAGOGICAL STATION

There is a medicopedagogical station, where backward children are studied and where attempts are being made

to connect certain diseases that develop only in adult life, with certain mental phenomena that manifest themselves during childhood. The patients in this department are sent there by parents, by the juvenile court and other child welfare agencies. Figure 7 shows a group of such children. Psychic tests are made according to the methods

Fig. 7. Group of patients at the Medico-Pedagogical Station. From left to right: lower row, (1) suicidal tendencies; (2) aphasia; (3) weakmindedness. Middle row: (1) moral defect; (2) hysteric; (3) neurasthenic. Top row: (1) ponomania (wanderer); (2) neuropath.

of Binet, Simon, Ebbinghaus, Bourdon and Marselon, and after a diagnosis is made a course of treatment is prescribed for home application; if the home surroundings will not admit of favorable treatment, the child is removed to a more promising environment—the country, perhaps, away from the deleterious influences. If there are remediable physical defects, treatment is applied in the institution.

Overcrowding of the State Hospitals

The annual report of the New York State Charities Aid Association calls attention to the fact that the state hospitals for the insane are so overcrowded that the health and chances of recovery of the patients are endangered, and makes a plea for the immediate construction of three additional hospitals. The fourteen hospitals in the state now hold 33,358 patients, although they were built to hold only 27,463. The total overcrowding is 5,895, an average of 21.4 percent, and the Manhattan Hospital, on Ward's Island, has 1,408 more inmates than it should have, an excess of 39 percent.

The Zurbugg Memorial Hospital, at Riverside, N. J., was officially opened by Mrs. Zurbugg with the handing of the keys to Dr. Alexander H. Small, Riverside, chief surgeon. The Zurbugg Memorial Hospital is a monument to the late T. Zurbugg, for years head of the Keystone Watch Co., who left $250,000 to establish the institution. Mrs. Zurbugg has announced that the present quarters represent only the beginning of the work planned by her husband. The hospital in the remodeled mansion of the Zurbuggs will later be converted into a nurses' home, when a new hospital capable of caring for the sick of Burlington County will be erected on grounds adjoining.

CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
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FRANK B. MARTIN, Domestic Literature.
Army Medical Museum and Library, Office of the Surgeon-General United States Army.

American Women's War Hospital. Lancet, London, 1915, No. 4772.

A new ward, to accommodate thirty patients, has been made possible by the utilization of the fine riding school at Paignton. This addition, to be called "St. George" ward, will bring the capacity of this hospital up to 230.

Hospitals in Paris. Special Correspondence, The Nursing Times, Jan. 30, 1915.

This article discusses most interestingly Val de-Grace, the most important military hospital in Paris, and describes the operation of the hospitals which have been organized in some of the large hotels. The Women's Hospital Corps has established a 100-bed hospital at Claridge's Hotel, the British Red Cross occupies the Hotel Astoria, and, in fact, says the correspondent, "Paris is crammed with hospitals: one or two in every street, and military funerals are of daily occurrence."

A German Hospital on Wheels. The Nurse, Feb., 1915.

A most interesting description of an ambulatory base hospital composed of railway carriages in use in the German army. The volunteer hospital train "Duchess Victoria Louise" is an all-steel train equipped by the Red Cross Association of the Duchy of Brunswick. There are 300 beds in the train, has laundry facilities for 600—so that it can discharge and receive patients without waiting changes of linen. The train not only contains operating rooms, sterilizers and water heaters, but also store rooms for linen and food supplies, executive offices for the head surgeon and a lounging room for surgeons and nurses.

The Relations of the Hospitals for the Insane to the Care of Alcoholics (Die Stellung der Irrenanstalt zur Trinkerfürsorge). Dr. J. Schweighofer. Oessterreich. San.-Wesen, Wien, 1914, XXVI, No. 41.

Hospitals for the insane receive only such alcoholics as are demented. The patients who are sent to such institutions may be divided into three groups: (1) the morally defective drunkards with criminal tendencies, in whom alcoholism forms the smallest part of their defects, but leads usually to criminal actions; (2) the psychopathic drunkards, who show marked moral defects; (3) patients in whom insanity was caused by alcoholism and who may be cured or at least improved by total abstinence. The first group of patients ought not to be admitted in institutions for the insane. They bring their prison habits with them and are a constant danger to their fellow patients and to the nurses. The second class of patients are the victims of a weak character. They can be cured, but

they should not be returned to their former surroundings. They should select a new occupation and become members of some abstinence society. The third group of patients can usually also be cured. But instead of sending all these alcoholics to hospitals for the insane, it would be best to establish special institutions for alcoholics where each case could be better studied and treated individually.

Annual Report of the Medical Officer of the Local Government Board for 1913-14. Lancet, London, 1915, No. 4773.

Dr. Newsholme, the medical officer of the Local Government Board devotes considerable space to the remarkable activity displayed by local authorities and voluntary agencies since last August, in promoting maternity and child welfare work. The safeguarding of child-life at its origin, so necessary in peace, becomes a thousandfold more urgent in time of war. England has awakened to her waste of infant and child life and is organizing maternity centers for intensive antenatal preventive work throughout the kingdom. In the north and south, east and west, infant welfare work is being done with ever-increasing earnestness.

Liverpool Merchants' Mobile Hospital. British Med. Jour. London, 1915, No. 2825.

The Liverpool merchants have provided funds for the construction of a unique field hospital. It is to contain all the latest contrivances of an up-to-date stationary hospital and its light wooden shell will permit of its removal and reerection within twenty-four hours. There will be eight pavilion wards, each to accommodate twenty-six patients. All the buildings will be connected by covered ways. A bath pavilion with fourteen baths is provided. This pavilion will have a room on one side for the removal of soiled clothing and on the other side a dressing room with clean clothes store attached. The Mobile Hospital is to be maintained as near the firing line as practicable, and four acres will be necessary for its accommodation.

A Hospital on Wheels. From Deutsches Journal, N. Y., Feb. 15, 1915.

A war correspondent describes one of the hospital trains, which, during last December, brought the wounded from the battles in Poland into the interior of Germany. The train was composed of 35 cars in all and in its completeness of equipment was a veritable hospital on wheels. Twenty-five cars with ten beds each received the wounded soldiers. The operation car contained also the pharmacy and a sterilizing and instrument room. One car carried the central lighting and heating plant. Two sleeping cars were provided for the surgeons, nurses and the hospital corps men. Other cars carried the provisions, kitchen, baggage, etc. All cars were connected by bells and telephone with the surgeon's and nurses' rooms. This hospital train was admired wherever it passed and when it stopped at Magdeburg the chief surgeon charged a fee of ½ mark to visitors. He thus collected 2,300 marks, which amount was turned over to the Red Cross.

History of Public Health in Dublin. Cameron, Sir Charles, Lancet, London, 1915, No. 4773.

The first trustworthy information relating to health conditions in Dublin dates from 1798. In this year, the Rev. James Whitelaw made a careful survey of the city and reported the tenements occupied by the working classes in a shockingly unsanitary condition. Little advance could have been made in the next half century, for in 1845 Dr. Thomas Willis writes of the working classes of Dublin as "sunk into that state of abject misery for which there is no parallel in any country in Europe." Some sporadic interest in the health of the city was taken by the municipal authorities during the twenty years that followed, and finally in 1864 the first officer of health, Edward Dillon Mapother, was elected. He was succeeded by Sir Charles Cameron. Mortality statistics begin to approach accuracy in about 1879, during which year the death rate from all causes was reported to be 37.5 per 1,000. Sir Charles Cameron details the various steps taken to improve housing conditions in Dublin and outlines the various activities for the improvement of the sanitary condition of the city. The death rate has gradually declined and in 1913 it reached its lowest point, 20.3 per 1,000.

The First Seaside Heliotherapeutic Station in Italy (La prima stazione elioterapica marina). Tubercolosi, Milano, 1914, VII, No. 4.

Since Dr. Rollier at Leysin, Switzerland, obtained such remarkable results by heliotherapy in the treatment of surgical tuberculosis, sanatoriums for sunlight treatment have been established in several countries of Europe. The first institution of this kind in Italy was lately founded by the Genoese Society for the Prevention of Tuberculosis. As this sanatorium is located on the seacoast, it has an advantage in that the marine treatment can be combined with heliotherapy. The sanatorium has a vast veranda, open towards the sea and protected from the north wind. Here the little sufferers are daily exposed naked to the healing influence of the sunlight. The sanatorium is connected with the dispensary maintained by the Society in the City of Genoa. Only children between three and fifteen years, and only those belonging to poor families are received for treatment.

The Instruction and Choice of Suitable Nurses for District Work in the Home, Tuberculosis and Infant Welfare Departments. Mary A. Mackenzie, R. N., Public Health Journal, Feb., 1915.

The author divides her topic into: (1) Ideal Candidates and Ideal Instruction; (2) Shortage of Suitable Material, and (3) Suggested Changes. Cultured, educated women, Miss Mackenzie thinks, who have seen life, and who know something of its temptations and disappointments, make the best nurses for this kind of work. They must have initiative and be able to "make something else do."

The average nurse, thinks the author, makes nine thousand beds during her training, and unconsciously the hospitals seem to be bidding for that kind of routine nurse instead of teaching her many things she will need to know when she must rely on herself alone. Miss Mackenzie pays a high compliment to the Victorian Order of Nurses of Canada, and in closing her most interesting paper suggests nurse training for home and welfare work to include: (1) Supervised practical work on the district; (2) observation of work in allied branches and societies, e. g., associated charities, settlements, child welfare, tuberculosis, factory, etc.; (3) lectures by experts on sanitary science, all branches of public health nursing, social service work, with field work always where possible.

Lighting the Operation Room in Small Hospitals (Ueber Operationssalbeleuchtung fur kleinere Anstalten). Heilanstalt, Leipzig, 1914, IX, No. 24.

Most hospitals now use electric light if it can be procured, because it is easily handled, develops little heat, and does not vitiate the air. As compared with gaslight

this is a great advantage where chloroform is used as an anesthetic. Gaslight, under such conditions, develops noxious gases which are harmful to the respiratory tract. At present there are two systems of electrical illumination, one by which the whole operation room is lighted up, and the other an apparatus invented by Krönig and Siedentopf which concentrates the light on the field of operation and especially on the body cavities. But this apparatus is very expensive and requires a strong current, and is therefore not suitable for a small hospital. Zeiss in Jena has lately constructed a smaller apparatus which combines the arc-light, lens-system and illumination mirror on a movable stand. The source of light is an arc-lamp which burns one and one-half hours and consumes about 4½ ampères. The carbons stand at a right angle to each other; the positive carbon has a horizontal, the negative a vertical position, so that the best possible use is made of the crater of the positive carbon as a source of light. The illuminated field has a diameter of 28 cm. with a distance of about 2½ meters from the external lens. In front of this lens is a mirror which can be placed in any position so that the light can be thrown downward from the lens in any desired direction. The stand is on rollers and can be moved about at will. This apparatus has given general satisfaction wherever used. The price is at present mk. 370.00 ($92.00), but it will be sold at a lower price as soon as the sales justify a reduction.

Establishing a Temporary Hospital Under Emergency Conditions (Amenagement d' un hôpital temporaire par des moyens de fortune). Dr. J. Gourdet. Presse méd., Paris, 1914, No. 76.

The author, who is a surgeon in the French Army, was ordered to establish a temporary hospital at Pontivy. He converted the college building into a hospital. It had at first only 330 beds, which were requisitioned from the citizens, but as the number of wounded gradually increased to more than 500, and beds could not be obtained, Dr. Gourdet had a large number of folding cots made, which proved very practical, especially as they could be folded and placed out of the way when not used. A large hall with very high windows was converted into an operation room. A sterilizing room was established by putting in a partition in the same hall. Acetylene lamps, such as miners carry, were used for illumination at night. To prevent infection from a defective floor, the floor was covered with linoleum. A variety of apparatus is described which, in the absence of the usual furnishings of a hospital, was improvised by the author. Instead of absorbent cotton, which had become scarce, he used gauze tissue (tissue éponge) for dressing wounds. He considers this material superior to hydrophile cotton, as it has greater absorbing power.

Sanatoriums for Tuberculous Children (Ueber Heilstätten für tuberkulöse Kinder). Dr. C. Kraemer. Med. Corr.-Blatt. d. württemb. ärztl. Landesver., Stuttgart, 1914, LXXXIV, No. 43.

The idea that high altitude has special advantages in the treatment of tuberculosis is erroneous. Statistics show that sanatoriums in low regions obtain just as good results as the institutions in Davos, Switzerland (1550 meters above the sea). At the sanatorium in Edmundsthal, near Hamburg, the tubercle bacilli disappeared in the sputum in 24 percent of the patients, while in Davos the percentage was 24.5. But in the former sanatorium the average duration of the treatment was only 89 days, while in Davos it was 198 days. The author holds that the tuberculin should form an important part in the sanatorium treatment of tuberculosis. The tuberculin treatment can only be properly carried out in a sanatorium. As a school is usually connected with the institution the children do not lose any time. The expenses for the parents are small. Poor children are received without pay in all the German sanatoriums.

Sanitary and Preventive Medicine Education Among the Chinese as an Important Part of the Work of the Medical Missionary. Jas. Butchart, M. D., Nanking, China. The China Medical Journal, November, 1914.

Dr. Butchart lays down two principles as the objectives in medical work: (1) the greatest good to the greatest number, and (2) quality rather than quantity. The problem of being overcome by stress of too much work can be overcome by choosing what the medical director wants to do himself and then turning the rest of the work over to Chinese helpers, who are capable and glad to do it.

The ways and means of accomplishing sanitary and preventive medicine education are, through the cooperation of the Y. M. C. A., through charts and through lectures on the prevalent diseases of the Chinese, such as tuberculosis, with moving pictures and slides covering the questions of housing, sewage disposal, water supply, infectious diseases and pests of all kinds (such as the fly, mosquitoes, bed-bugs, fleas, lice and rats) and their causative relation to disease.

The Home Hospital. William Parr Capes. The Public Health Journal, Feb., 1915.

That proper housing conditions and wages are the most efficient weapons with which to fight tuberculosis, is the subject of the author's very interesting paper. Mr. Capes explains the work of the New York Association for Improving the Condition of the Poor. In the East River homes, the model tenements of New York City, there has been established a Home Hospital for twenty families which have been dragged down into poverty by tuberculosis. The principal object of the home hospital is "to preserve the home." It has proved to be perfectly practicable to treat families in which there is tuberculosis as a family unit without apparent danger of spreading the infection to well members of the family. The infected individual sleeps out of doors on the balcony, is carefully fed and isolated as far as possible from the well members, and the well members are encouraged to spend the days on the roof, and return to their apartments only to eat and sleep. The author gives a table of interesting statistics, showing the results of the Home Hospital. During the last two years 46.6 percent have been apparently cured, 35.5 percent have been able to arrest the disease, and 17.7 percent have been much improved. The average living expenses of the families under care last year were as follows:

	Average Daily Expense per Family 1913-14.	Percent. 1913-14.
Rent	$0.792*	33.16*
Food	.929	38.9
Clothing	.233	9.75
Fuel	.050	2.09
Lunch	.051	2.13
Dues	.055	2.30
Medical and surgical supplies	.071†	2.97†
Ice	.012	.50
Carfare	.045	1.88
House supplies	.056	2.34
Miscellaneous	.094	3.93
Totals	$2.388	99.95

*Includes expense of heat and light.

†Includes expenses of paper napkins, sputum boxes, and all medical and surgical supplies.

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Eleven hundred years before Christ there was a college of physicians in Egypt in receipt of public pay and regulated by law as to the nature and extent of their practice. This college belonged to the Sacerdotal Caste, and women practiced medicine there. According to pliny, as the physicians were paid officers of the state, they were required to treat the poor gratuitously. These physicians, however, were not obliged to attend the sick in their own homes or at their private consulting rooms except in cases of extreme need, and so it is presumed that there were official houses to which the poor went at certain times, and which corresponded to the out-patient departments of our hospitals, or, even more probably, to our dispensaries.

The Union Benevolent Association, of Grand Rapids, Mich., has recently invited bids on a nurses' home to cost approximately $80,000, this building to be erected in connection with the $500,000 hospital which the association has had in course of construction for several months. It is expected that both structures will be completed this year.

DEPARTMENT OF NURSING

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First Impressions

Nothing helps or hinders a hospital and its work more than the first impressions received by the patient upon being admitted. This theory is too often lost to sight and mind in the pressure of daily routine in the busy hospital.

Visiting nurses are able to judge of the thrift and cleanliness of people inhabiting an apartment house by the appearance of the entrance. The casual observer walking through the more crowded tenement districts understands the character of the dwellers therein from what he sees of the entrance to the tenements.

The visitor to any home is welcome and happy or otherwise in accordance with his first impressions.

The good business man understands the necessity for favorable impressions if he is to be successful. Then how much more the hospital to which its patients come reluctantly and with fear and trembling.

Its entrance should be pleasant: possibly it is as well that it should not be too ornate lest it be overpowering. It should be pervaded by a homelike air that yet gives the impression of strict attention to the details of business, and it should not be inhospitable—that is, an interested attendant should always be in evidence.

A young Italian woman applied for admission to a hospital, but because she saw no one outside the door to meet her upon her arrival there, she reported back to her family that there was no one at home at the hospital and she supposed she could not have her operation done.

What is true of the entrance to the hospital is equally true of the hospital ward where the patient should be met by the nurse with a spirit of cordiality and cheerfulness that would at once remove fear and establish confidence. This cordiality and cheerfulness need not be of the exuberant kind, which is revolting to a sensitive patient, and at once brands itself as affectation, but just the kind that conveys to the patient, without words, the idea that since he *had* to come, the nurse is glad to be there to help him.

There is a certain strength emanating from the dignified nurse who meets her patient in a businesslike, cordial manner that soothes while it strengthens and augurs well for the relationship to be established between the nurse and her patient.

If these first pleasing impressions are thus effectual it would seem wise to cultivate the talent for making them so.

A pleasing personality is a wonderful asset for a nurse. She makes a good impression which, whether she has any other qualities for sustaining it, will last until she has had time to get her bearings and establish herself upon a more substantial basis.

While the pleasing personality is a good means for making a promising beginning, however, it cannot be depended upon to carry a nurse through a great effort; for this she will have to return to the qualities which go to make a good woman and a good nurse; for the development of these she has undertaken her training. Her degree of success will depend upon several factors, such as her breeding, her intelligence, her education, her love for humanity and her desire to be useful. She may love her fellow-men and wish to do them service, but if she is wanting in intelligence and that cultivaton which is called education, she will fall short of the realization of the highest success. Again, if she possesses these latter qualities and "speaks with the tongue of angels, and have not charity, she is but tinkling brass."

While the power to make a good impression does not necessarily make a good nurse, it is the part of duty as well as of expediency that she shall be careful of first impressions upon her patients, whether in the home or in the hospital.

The Object of the National Organization for Public Health Nursing

ELLA PHILLIPS CRANDALL, R. N.,
Executive Secretary The National Organization for Public Health Nursing.

There is no more splendid record than that of the rapid growth of hospitals and other institutions for the care of the sick in the United States. In comparison with these provisions, however, the American public has been surprisingly slow to recognize its similar obligation to care for those who, for one reason or another, cannot or will not go to hospitals, and, therefore, must be provided for in their homes. Yet Dr. Osler tells us that not more than ten percent of the sick population is cared for in institutions. Considering only the nursing aspects of this public duty, and making allowance for the small proportion of the remaining ninety percent who can afford to employ graduate nurses at $25 per week, there obviously remains a large majority of the sick to be cared for either by "practical nurses" (untrained) or by skilled visiting nurses. Had this estimate been made and published fifteen to twenty-five years ago, the history of visiting nursing in the United States would certainly have been different, but the fact remains that as late as 1901 there were only 53 associations and 136 nurses engaged in this kind of work throughout the country, and a "municipal" was a barely known and quite untried public servant.

About that time what is now generally known as the public health campaign took definite form and with its development came a steadily increasing demand for visiting nurses. Now there are 2,066 associations and 4,895 nurses, and every mail brings notice of others to Miss Yssabella G. Waters, to whom we are indebted for these figures. Moreover, there has been a proportionately rapid and far-reaching expansion in the scope of the nurses' work and of their responsibilities. For example, whether in the movements against tuberculosis and infant mortality, or in behalf of school hygiene, or industrial health and safety, or medical social service, the qualified visiting nurse has been almost universally regarded as an indispensable agent and by many "the strategic object in the public health campaign."

This is true for three definite reasons. First, no amount of scientific knowledge in scientific terms will greatly increase the popular intelligence regarding the means of preventing disease unless supplemented by interpretation which *all* the people can understand. Generally speaking, those who need this knowledge most cannot be reached

by lecture or the printed page. While the moving picture is a powerful ally, it is still indisputably necessary to reach the individual and the family before there can be any assurance that the message has been understood or is being practiced.

Second, no amount of administrative control by boards and bureaus and commissions can or will really overcome individual ignorance or stupidity or indifference regarding health measures unless supplemented by a follow-up agent whom the people will welcome, respect and heed.

Third, the visiting nurse is most logically and economically that interpreter and follow-up agent. This is peculiarly true of her because she not only tells them what to do, but she shows them how to do it. Florence Nightingale said years ago, "the only word that sticks is the word that follows work."

The nurse's work in the home is the chief reason for the welcome she invariably receives. Herein lies the explanation of the fact that the present demand upon the public health nurse is becoming so varied that it is sometimes difficult for her to discriminate between essential duties and attractive opportunities for larger service. She is still the "sick nurse," but she may also be expected to act according to the demands of the community which she serves, as a school and baby welfare nurse, or a tuberculosis nurse, or health and hygiene teacher, or visiting dietitian, or gatherer of vital and morbid statistics, or social worker and relief agent, or sanitary inspector, deputy health officer, attendance officer, county bailiff, member of the local board of health or board of public welfare.

In the light of the foregoing statement (which would certainly be unpardonably presumptuous if the writer had departed in the least from actual facts) it goes without saying that it is not enough for a public health nurse to be a good, faithful, plodding caretaker of the sick, plying her daily rounds among the poor. She is now required to know and understand community health problems, laws and ordinances. She must know the agencies provided at public and private expense for the care and protection of sick and otherwise dependent people. She must be capable of doing her part in spreading the gospel of health, hygiene and sanitation, and securing public support for various programs of health education and protection.

The boards of directors of visiting nurse associations are no longer content quietly to administer a grateful charity in their community. They find themselves, as well as public health officials and departments of education and other officers of the community, involved in questions of pure milk supply, polluted streams, bad housing, appropriations for open-air schools and classes for defectives, and numerous other matters of civic interest which intimately relate to the work of their staff nurses. They more often than not become the experimenters and demonstrators of these public benefactions. It is frequently their function to create public demand for them.

Although the decade from 1900-1910 witnessed this rapid expansion and extension of public health nursing, there had been up to that time no effort to organize and standardize the work or its administration. There were no recognized requirements for the visiting nurse. There was no collective power or influence exerted by the scattered and unrelated and, generally speaking, unacquainted workers. But in June, 1912, a national association known as the National Organization for Public Health Nursing was established. This is an organization of nurses and lay people, engaged in the actual work of public health nursing and in the organization, management and support of such work. It came into being because its founders recognized three rather clearly defined facts, namely: "the experience data available emphasized the urgency and practical necessity for the extension of public health nursing service to a much larger proportion of wage-earners and people of moderate means than now have the benefit of the same;" 1,492 registered public health nursing organizations, publicly and privately maintained, waited for correlation and standardization of their work and its administration; and the public was waiting for reliable morbidity statistics which these organizations could furnish to statisticians through the adoption of uniform and standard record cards.

Its members, numbering over 1,500 lay people and nurses (of whom about thirty-three percent are lay people), are now working to these ends, both in their own localities and collectively. Nearly every state in the Union is represented. The personnel of its governing body is selected with three ends in view: first, to represent all varieties of public health nursing service; second, to represent all sizes of communities; third, to represent all sections of the country.

The association helps boards of directors by uniting in common interest members of boards all over the country, who recognize the work of the public health nurse and see in it both an opportunity and obligation to give assistance to the community as well as to the needy sick individual at home; it helps each board to convince its community of the need of public health nursing; it shows them how to operate an organization for public health nursing; it furnishes them with standards of nursing service and cooperates with them to maintain a high order of efficiency; it gives advice on any problems connected with the organization and administration of a public health nursing service; it assists them in finding well-trained executives to organize and develop their work, and suitable nurses for their staffs.

It helps nurses by furnishing them with specific information regarding methods of procedure in public health nursing, and cooperates with them in establishing and maintaining these methods; it furnishes them with standards for efficient work and points out opportunities of extended usefulness; it advises them on any problem connected with their nursing service and helps them adjust possible difficulties; it directs them in their efforts to secure proper education and experience for public health nursing service; it acquaints them with public health workers in other communities; it helps them to find suitable positions in public health nursing.

Its ways and means of serving local associations and nurses are: a central bureau of reference; an executive and traveling secretary, who is at the service of any society or community in need of advice, information and assistance in matters pertaining to public health nursing; uniform record cards; its magazine, *The Public Health Nurse Quarterly;* occasional bulletins (distributed free of charge to members), containing valuable information and practical suggestions for nurses and nursing organizations; other authoritative publications (distributed at nominal cost to others than members) on methods or organization, administration and practice of public health nursing; brief, but carefully selected bibliographies.

Perhaps nothing it has done will be more far-reaching in its effects than the share the organization has taken in the development of post-graduate courses in public health nursing education (of which there are now six) which have come into existence to meet the demand for women prepared by proper education for such varied and exacting work.

The organization stands for

1, active cooperation and affiliation of all public health nursing in each community, represented by a central committee on which sits a director and executive officer of each association.

2, sound business principles and methods of administration in local associations, as distinguished from the role of "charity."

3, a fee system rather than free service, thereby extending the benefits to others than the dependent classes.

4, special preparation of nurses for public health nursing, both general and special, through

(1) post-graduate courses;

(2) undergraduate studies and practice.

It is interested in the possible development of sickness insurance with nursing care, which shall be available and acceptable to all people as an immediate and effective step toward free public health.

To this end it regards as worthy of most careful experiment the extension of visiting nursing to include hourly and household nursing (the principles of which are already clearly expressed and often practiced in every well-organized visiting nurse association), thereby making the service equal to every demand upon it from all classes of socety.

It hopes for universally free public health as provided in the revised Health Code of New York State:

"Public health nurses. Each health officer or other official exercising similar duties, by whatever official designation he may be known, shall have power to employ such number of public health nurses as in his judgment may be necessary within the limits of the appropriation made therefor by the city, town or village. They shall work under the direction of the health officer and may be assigned by him to the reduction of infant mortality, the examination or visitation of school children or children excluded from school, the discovery or visitation of cases of tuberculosis, the visitation of the sick who may be unable otherwise to secure adequate care, the instruction of members of household in which there is a sick person, or to such other duties as may seem to him appropriate."

It aims to demonstrate that the public health nurse is as indispensable a community servant as the public school teacher.

A Modified Course of Bacteriology for the Small School

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The importance of at least an introductory study of bacteriology early in the course of training is generally conceded. There is nothing more convincing to the young nurse, as a foundation to her technic in scrubbing up for various nursing procedures, than a set of experiments which show the ubiquity of microorganisms and the conditions favoring growth. Even with no microscope work at all, many practical tests may be made to prove desired points.

The apparatus may be very simple, and barring the microscope, inexpensive. Some of the things needed are: white plates and bowls; test tubes, which cost about $3.15 a gross; petrie dishes, 10 mm. deep and 100 mm. in diameter, costing at retail about forty cents each; two or three platinum needles at seventy-five cents each; medicine droppers; a couple of glass flasks, and absorbent cotton.

The quantity of apparatus needed will depend upon the number of pupils working at one time. Less is needed if the teacher is to do the experiment for the whole class; but a student will usually remember her own work better than a demonstration by the teacher.

The dishes should be sterilized beforehand, as the success of the experiments depends on the care in preparation. This may be done in the operating room, or the dishes may be boiled and allowed to drain between sterile towels.

Owing to the similar characteristics of growth, and their larger size, molds make a fitting subject for the first study. Bread, well moistened, covered with a bowl or bell-jar and set in a warm place will usually show a growth of mold in two or three days. Different varieties may be captured by exposing the bread in different localities and using other foods. The difference of growth obtained from exposure before and after sweeping, and in shaking damp and dry dusters over different specimens, is marked. The effect of cold, heat, drying and air currents is easy to show.

Yeast responds equally well, its growth being indicated by the fermentation of a dilute molasses and water mixture, and the increased bulk of white sediment formed by the yeast plants in the bottom of the tube. The presence of yeast in the air is shown by exposing the molasses and water in different places and making cider from apple juice. If one has a compound microscope, so much the better, as the yeast may be identified as the causative agent. The effect of temperature and light and the age and dryness of yeast plants can be shown. After the introductory work with yeast and molds, the pupil will have some idea of what to expect from the growth of bacteria.

One will need a supply of broth and solid culture media, which may be made satisfactorily either by the teacher or the class. A simple recipe which has been used with good results is the following:

Liebig's Beef Extract	46.5	grains
Witte's pure Peptone	2.5	drachms
Salt	1.25	drachms
Water	2	pints

The solids are dissolved in water and the mixture is boiled for a few minutes, then neutralized, if necessary, with sodium hydroxide, drop by drop. Care must be taken not to allow it to become alkaline, as the heat during sterilization often causes it to become cloudy. Filter into tubes or flask and plug with absorbent cotton.

Gelatine or agar may be used for the solid culture medium. For agar the broth may be prepared as above. The agar, which has been cut in fine bits, dissolved in water and boiled for about an hour, is then added and the mixture boiled again. After cooling to about 140° F clarify by stirring in the whites of one or two eggs and boiling. Do not allow to burn. Filter while hot, using absorbent cotton covered with gauze. If one has a large enough supply of test tubes, it is easier to filter directly into the tubes, placing about 2.5 drachms in a tube. The broth and agar are then sterilized once in the autoclave, or the steam sterilizer is used, for fifteen minutes or longer on three consecutive days.

To illustrate the connection of bacteria with putrefaction, place in a set of test tubes different foods representing proteins, carbohydrates and fats. If moistened and set away in a warm place for a few days, bacterial preference may be seen by the appearance and odor. Experiments to show the effect of temperatures, boiling, freezing and acidity may be devised, using the same materials. Hay infusions may be made by steeping hay, and the effect of boiling upon spores may be noted. Broth and agar are useful principally for growing cultures from diverse places; for example, the hands, before and after scrubbing; finger nails, teeth, hair, shoes, gauze, etc. If work with a microscope is out of the question, an idea of comparative numbers may be secured from the colonies on an agar plate. In this work technic must be most careful.

The efficacy of disinfectants and antiseptics in different strengths may be tested by agar plates. The number of bacteria in samples of water may be demonstrated by colony counts, as well as milk and ice-cream samples, in suitable dilutions.

Perhaps some one on the staff of physicians and surgeons will exhibit slides of the organisms under the microscope, though to students not used to it, one hour spent in hasty glances at a succession of slides does not usually mean much.

If the instructor has access to a microscope and the skill to use it, pure cultures of any bacteria desired for teaching purposes may be secured free of charge from the Natural History Museum in New York City upon application to the curator.

A book which will be found helpful for suggestions and directions for laboratory work is "Bacteria, Yeasts and Molds in the Home," by H. W. Conn, published by Ginn & Co., Boston and New York.

Chemistry in the Small Training School

SUSIE A. WATSON, R. N.

Those most closely concerned with the modern education of a nurse agree that some knowledge of chemistry is an essential thing. It is a debatable question whether or not any attempt shall be made by the training school to supply a lack of this in their students. Those who have tried to teach physiology, dietetics or materia medica to pupils who have never studied chemistry, can affirm the necessity of at least some familiarity with chemical terms and processes. Therefore, until the training schools can demand this as a required subject for entrance, it may advantageously be given as a preliminary subject.

There are several factors to be considered when planning such a course of study. First, the length of time which can be allowed for this. In the few schools offering this as a part of their curriculum, the time varies from six to forty-five hours for the subject. Even the six-hour course seems worth while. Second, the choice of subject matter. As a guide to this, one can examine the subjects ordinarily taught in the schools of nursing, selecting the points which need a chemical explanation. The most important may be chosen according to the time allowed. Third, the method of teaching. If it is a possible thing to arrange for laboratory work by the students, the results will be more satisfactory than if one relies upon class work alone. Some study in the laboratory of a few of the most common elements and their compounds will give the pupil a better idea of chemistry than many lectures filled with strange terms and definitions. Classroom demonstrations are of necessity rapid and under the practiced hand of the teacher, and obscure points may be passed unnoticed by the looker-on.

Few hospitals have laboratories for nurses as a part of their plant, but this work may be done in any room that is easy to ventilate, which has running water, and gas connection. Alcohol lamps may be used instead of Bunsen burners, though they are not so satisfactory. Another thing invariably lacking is adequate storage room for extensive apparatus. This difficulty and likewise the expense of buying several duplicates can be overcome by assigning a different experiment to each student or group. It is seldom that two experiments call for identically the same apparatus. When student number one has finished her experiment, she can then use apparatus just returned by number three, and so on. The students attend more strictly to their own work and less to that of their neighbors than when all are doing the same.

The list of equipment given here is the minimum. It can be increased according to the space for storage, number of pupils in the class, appropriation which may be spent, nature of experiments selected, and so on.

500 cc. flasks	per dozen,	$ 3.15
Two-holed rubber stopper to fit	per dozen,	1.80
Glass tubing for bending	per pound,	1.10
(This comes in two-foot length, about fifty feet to a pound.)		
Thistle tubes	each,	$ 0.25
Cake tins		.....
Triangular file		.50
Scales and weights		10.50
Filter paper, 4-in	per hundred,	.28
Funnels, 3-in. diameter		.48
Porcelain evaporating dishes	per dozen,	3.00
Porcelain crucibles with covers	each,	.40
Mortar and pestle, 4-in	each,	.60
Watch glasses	each,	.20
Wide-mouth bottles	each,	.11
Nest of breakers, 1 to 16 oz	per nest of nine	2.25
Test tubes	per gross,	3.15
Ignition tubes	each,	.10
Rubber stopper with one hole to fit.		
Test tube holders	each,	.32
Horn spoons	per dozen,	1.50
Graduates, 10 cc	each,	.46
Graduates, 50 cc	each,	.96
Glass stirring rods	per dozen,	.40
Ring stands	each,	1.35
Wire gauze squares	each,	.25
Deflagrating spoons	each,	.45
Test tube rack	each,	.90
Test tube brushes	per dozen,	.65
Medicine droppers		.....

The prices quoted are those listed in the catalogue of an old and reliable firm, whose goods are of standard quality. From this would be subtracted a discount varying with the size of the order.

The choice of chemicals depends upon the experiments selected. Most of these are cheaper by the pound, and a pound lasts a long time.

There is a manual for laboratory work written by Hollis Godfrey, published by Longmans, Green & Co., the price of which is forty cents. This gives full directions for simple experiments and is especially helpful if the instructor is a nurse whose own chemistry course is in a somewhat hazy past. It also includes a list of both apparatus and chemicals called for in the text. These lists may be cut down to suit the instructor, but serve at least as a guide.

Aside from the value of laboratory work to the study of chemistry, it develops judgment, accuracy, and deftness, all of which are indispensable in our profession.

In the daily routine of a hospital, with its variety of patients, the work of a nurse, even while herself receiving instruction, is not without its immediate results. The hospital is her workshop, in which she must serve an apprenticeship, and from the day she enters it the preservation of human life and the alleviation of human suffering are, to some extent, delivered into her hands. Can a woman, in any other kind of work which she may choose for herself, find a higher ideal or a graver responsibility? Where human life and health are concerned, what shall we term "the little things"?

MRS. ISABEL HAMPTON ROBB.

Obedience to orders, founded on principle and animated by an intelligent interest, is the dominant characteristic of nursing. MISS L. L. DOCK.

Menominee, Wis., has a new public hospital.

PREVENTION OF TUBERCULOSIS

Conducted under the auspices of the National Association for the Study and Prevention of Tuberculosis.

"FROM FAD TO BUSINESS"

Red Cross Seals and the Anti-Tuberculosis Campaign

Christmas, 1915, seems a long way off, but already the American Red Cross and the National Association for the Study and Prevention of Tuberculosis are making preparations for the sale of Red Cross Christmas Seals. Returns from the sale in 1914 are only about 50 percent complete, but present indications point to a sale of over 52,000,000, an increase of 15 percent over 1913. With this encouragement, the outlook for 1915 appears to be bright.

In view of the magnitude of the Red Cross Seal sale, readers of THE MODERN HOSPITAL will doubtless be interested in a brief history of this movement and its significance to the anti-tuberculosis campaign. "From fad to business" might be an instructive and explanatory title for such a history. Beginning with the pioneer efforts of one woman, Miss Emily P. Bissell, of Wilmington, Delaware, in the fall of 1907, the sale of these holiday messengers of cheer to the sick and afflicted has grown from $3,000 to $450,000 in 1913, with a total of nearly $2,500,000 realized in the eight years. The interest likewise has developed from that of a few scattered enthusiasts, who looked upon the seal as one of many passing fads, to the highly intensified, businesslike organization which at this very hour is enlisting the energy of more than 150,000 men, women and children, and which comprehends the distribution of 150,000,000 seals in almost every state of the Union and even out in far-off Hawaii and the Canal Zone.

What this movement has meant to the anti-tuberculosis campaign in the United States few people can realize. In 1908 the organized campaign against tuberculosis in this country existed largely on paper. The Tuberculosis Directory of the National Association for the Study and Prevention of Tuberculosis, published that year, listed 195 associations and committees formed for the specific purpose of preventing this disease. Including sanatoriums, dispensaries, visiting nurses, of whom there were less than 100, and other institutions, the entire number of agencies engaged in the anti-tuberculosis work in the United States was hardly 600. Of these agencies, only a few of the older private and public sanatoriums and dispensaries, and not more than a score of the associations, had enough money in their treasuries to do active work. For the most part, the organizations were working on a volunteer basis, spending their money with little or no definite plan or program.

Contrast this picture of 1908 with today's fighting force against tuberculosis. At the present time active state associations, with salaried executive secretaries or similar officers, are at work in thirty-four states—Maine, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, North Carolina, Kentucky, Tennessee, Georgia, Alabama, Mississippi, Louisiana, Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, Nebraska, Kansas, Oklahoma, Texas, Colorado, Washington and California. In almost every city of the country with a population of 100,000 or over, and in hundreds of smaller cities and towns, the anti-tuberculosis campaign is now being operated on a business basis, with a paid officer or nurse in charge. Even into the unorganized rural communities the gospel of health is being carried by those energetic missionaries, the visiting nurses, of whom at the present time nearly 5,000 are engaged in tuberculosis work alone. Efficiency is now the keyword of the vocabulary of the anti-tuberculosis worker, and efficiency spells for him the expenditure of money in leadership, institutional and home care of the consumptive.

It is no exaggeration to say that the present highly organized and constantly growing movement against tuberculosis owes its efficiency largely and in many places entirely to the Red Cross Christmas Seal. Take, for example, the history of our state associations. Prior to 1908 there were about twenty such organizations, existing chiefly on paper. The task of financing them seemed almost hopeless. With the arrival of the Red Cross Seal, however, the problem was at once solved, with the results already indicated. Similarly one might speak of the financial benefit to the local associations for which previously it had been impossible to secure proper support.

But more than financial benefit of the Red Cross Seal has been its educational assistance. Every year during these holiday weeks millions of circulars, posters and other forms of literature on tuberculosis are distributed; thousands of lectures on this subject are given; school children by the thousands write compositions and in other ways "learn by doing" the value of tuberculosis prevention; while lodges, labor unions, business men's associations, churches, clubs, and, in fact, almost every organized group in the largest communities of the country have presented to them the story of tuberculosis and how the Red Cross Seal helps in the fight against disease. Who can estimate the value of this education in the checking of carelessness, in the awakening of public conscience, in the arousing of community effort, and in the promotion of personal hygiene?

The Red Cross Seal has apparently come to stay. It is now a recognized annual institution, through whose channels people may contribute regularly to the anti-tuberculosis campaign. Every one of the 250,000,000 seals sold in the last seven years has been or will be a real "bullet in the war against tuberculosis." Just as the soldier relies on his ammunition chest, so the anti-tuberculosis crusader must rely more and more on these little Christmas bullets, which shall be for him the shot and shell with which he will shatter the strongholds of ignorance, suffering and disease.

TUBERCULOSIS LAWS

Many Bills on Prevention of Disease Being Discussed

Bills dealing with tuberculosis are now being considered in thirty-two state legislatures, according to an announcement recently made by the National Association for the Study and Prevention of Tuberculosis.

In six states, Alabama, Arizona, California, Iowa, Tennessee and Washington, bills are being considered which call for the reporting and registration of all active cases of tuberculosis. Alabama, Connecticut, Iowa, Massachu-

setts, Pennsylvania and the District of Columbia are working for laws which will require that consumptives who refuse to observe sanitary regulations and are a menace to others may be removed and detained in hospitals. In Alabama, Arizona, California, Illinois, Maine and Missouri legislation permitting the establishment of county or local hospitals for tuberculosis are being discussed, and in California, Illinois, Iowa, Maine, Missouri and New Hampshire, state subsidies of $3 to $5 per week per patient are being asked for such institutions. A more or less complete reorganization of the state health work is sought in several states, especially Kansas, Michigan, Minnesota, Nebraska, Texas and Arizona. In Indiana and Alabama bills providing for full-time county and city health officers are being considered.

As an aid in furthering these and similar bills, the National Association has issued a pamphlet entitled "Tuberculosis Legislation," which contains a digest of existing laws in this field, with comments and comparisons of some of the most important ones.

TO FIGHT TUBERCULOSIS AMONG WORKINGMEN

National Movement Among Labor Unions and Factories Started

A new campaign for closer cooperation with labor unions and other groups of workingmen has recently been announced by the National Association for the Study and Prevention of Tuberculosis.

A committee has been appointed with Dr. Theodore B. Sachs, president of the Chicago Tuberculosis Institute, as chairman, to formulate plans for immediate and future action. Other members of the committee are Samuel Gompers, president of the American Federation of Labor, Washington; George W. Perkins, secretary of the International Cigar Makers' Union, Chicago; John Mitchell, of the New York State Compensation Commission, New York; Austin B. Garretson, president of the Brotherhood of Railway Conductors, Cedar Rapids, Iowa; Dr. William Charles White, medical director of the Tuberculosis League of Pittsburgh; and David R. Lyman, superintendent of the Gaylord Farm Sanatorium, Wallingford, Conn.

As the first step in the campaign, a special health bulletin has been prepared for the labor papers, and will be sent out monthly in cooperation with members of the International Labor Press Association. A second step in the plan is an investigation into the various special experiments of cooperation between workingmen and the anti-tuberculosis movement that have been carried on in this country. Such work as that of the tuberculosis relief associations in Hartford, New Haven, Meriden and other Connecticut cities; the Trades Union Sections of the Buffalo and Newark Anti-Tuberculosis Associations; the work of the Factory Committee of the Chicago Tuberculosis Institute; the Tuberculosis Pavilion of the Albany Federation of Labor; the "Overlock Plan" of Massachusetts; and other similar efforts are being studied and reported upon. These reports will be made the basis for recommendations and further study in industrial communities throughout the country.

In 843 A. D., the Archbishop of Paris wrote a letter to the Pope, complaining of the gross mismanagement of the Hotel Dieu, the great public hospital at Paris, and asked that the hospital be placed under government management. He complained that discipline among the "hirelings" of the hospital was destroyed, and that patients and servants alike complained of "their daily allotment of food."

Cincinnati General Hospital Opens

With formal ceremonies in the afternoon and a splendid banquet on the evening of February 20, the new Cincinnati General Hospital was opened to the public and for the reception of patients. In the afternoon the services in the amphitheater of the operating suite were simple but impressive. Dr. Christian R. Holmes, chairman of the board of hospital commissioners, in a modest and self-effacing speech presented two golden keys of the hospital to Mayor Spiegel and formally transferred control of the institution to the city. Dr. Holmes spoke of the fifteen years during which the hospital had been conceived, planned and built, and paid a glowing tribute to former mayors, former councilors and many prominent citizens who had supported the commissioners in their arduous task. He paid a tribute also to his fellow members of the board of commissioners, Harry L. Laws, James A. Green, Louis S. Levi, Charles Bolt and, until his retirement, Dr. J. M. Withrow.

The mayor in a few brief words accepted the hospital on behalf of the city and spoke feelingly of the disinterested service that had been rendered to the hospital from its inception to its completion by Dr. Holmes and his fellow members of the hospital commission.

The chief speaker of the occasion was Dr. Henry S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching. Dr. Pritchett referred to the long leadership of Cincinnati as a medical center, spoke of the medical profession of Ohio as one that had for many years led in medical science; he spoke of the need for teaching facilities in the modern municipal hospital and thought that no such institution could be successful or could achieve its highest purpose without ample teaching facilities. He made a plea for endowments for the teaching institution in order that its several chairs might be held by full-time teachers.

In the evening a splendid banquet was given at Hotel Sinton to the board of hospital commissioners by the Chamber of Commerce of the city. There were 189 guests, and Mr. Wm. B. Melish was the toastmaster. Again Dr. Pritchett was the principal speaker, and his subject was "The University Medical College."

Mr. Thomas C. Powell, president of the Chamber of Commerce, responded to a toast, "Appreciation of the Citizens of Cincinnati," in which he paid a marked tribute to Dr. Christian R. Holmes and his fellow workers on the hospital commission.

Mayor Spiegel modestly said only a few words and amid loud cheers and handclapping and a great ovation, called upon Dr. Holmes to speak for the hospital commission.

Dr. S. J. Mixter, Senior Chief Surgeon of the Massachusetts General Hospital, Boston, spoke on "American Medicine," in which he took occasion to compliment Dr. Holmes and the public-spirited citizens of Cincinnati in building such an institution. The last speaker was Dr. B. K. Ratchford, president of the medical staff of the hospital, who spoke on "The Medical Profession of Cincinnati."

The guests of the evening were made up of Cincinnati's foremost business and professional men, many physicians and a number of prominent out-of-town people.

For two days, February 20 and 21, all parts of the new hospital were kept open for the reception of visitors and there were ushers to show them the special features of the new hospital. On the 22d the new institution was opened for the reception of patients.

A general hospital being erected at Dover, N. J., will be opened in April.

PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
Department of Family Welfare.
DONALD B. ARMSTRONG, M. D., Director,
Department of Social Welfare.

A NEGLECTED NATIONAL DEFENSE

The Teeth of Public School Children

BY HOLLAND HUDSON

The daily newspapers, weekly journals and even the stately reviews have been much taken up, since the war began, with discussions of our national defense policy. The arguments employed have hinged almost altogether on armament and on the numbers of troops available today. Whether jingo or pacificist be right, a sturdy, healthy population is essential to a nation's prosperity in either war or peace. A sick people is a defenseless people, whatever its armament or its history.

The United States is today, in spite of hospital statistics which are read with more equanimity than they deserve, as well off physically as most nations, thanks to a vigorous pioneer stock and to fairly sturdy immigration. Will it be as healthy tomorrow? Will the vigor of pioneer and immigrant heredity withstand the strain of modern urban life without extraordinary precautions?

Dental clinic for school children. (Maintained by Division of Child Hygiene of New York Department of Health.)

The teeth of school children in New York City are no happy augury for the health of tomorrow. An official census of school medical inspections in 1913 showed 69.7 percent of the children examined to be in need of immediate dental treatment. Of this total, subsequent reports showed only 23.8 percent treated. According to these figures more than half a million school children are constantly exposed to the results of dental neglect, none of which helps to produce healthy adults. According to dentists and doctors who have studied the relation of dental and general health, some of the results of neglected dental defects are:

1. Malnutrition—diseased teeth being inefficient agents in the preparation of food for assimilation by the system.
2. Infected material from the cavity of the tooth coming in contact with the food frequently exposes the food to contamination and it goes to the stomach in a septic state.
3. Indigestion, caused by improper mastication of food.
4. Malnourished bodies, resulting in inability to resist disease.
5. Diseased teeth are the cause of great economic loss because of the pain, which renders the individual incapable of producing on the same basis of efficiency as would be possible in a healthy state.
6. Facial neuralgia is frequently the result of tooth-rot.
7. Through incubation in decayed teeth pathogenic bacteria have an excellent opportunity to enter the system. Thus there is danger in exposing carious teeth to dirt or dust-carrying pathogenic organisms. The temperature, the darkness, the inaccessible character of the mouth, increase the danger of infection.
8. It is believed, also, that the tooth socket infection in pyorrhea alveolaris is responsible for the disabling general systemic disturbances described symptomatically as rheumatism.

Against these dangers the city of New York maintains, through its Department of Health, seven dental clinics where treatment is given to as many cases as the clinics can handle with nine dentists on half time. As the number of children with serious dental defects is more than half a million, it is obvious that the present equipment scarcely touches the problem. In 1913, under the direction of Mr. Edward F. Brown, the Bureau of Welfare of School Children of the New York Association for Improving the Condition of the Poor made a very thorough investigation of school dental hygiene. An appalling disproportion was found between the clinical facilities and the urgent dental needs of school children. The bureau recommended to the city the establishment of dental clinics and the employment of more dentists. These recommendations were enthusiastically endorsed by the First District Dental Society. The Department of Health had been aware of the inadequacy of its equipment and recommended in its budget estimate the immediate addition of six dentists, further increase being contemplated in future budgets.

The outbreak of the war caused the Board of Estimate and Apportionment to alter the city budget very materially, few new expenditures being projected. The effort to safeguard the city was centered on the city's strong-box. The working fund of the Department of Health was decreased more than $90,500. It is not entirely accurate to lay this crippling of the health department's activities en-

tirely at the door of the European war. The war is only the emergency which shows the lack of public appreciation of constructive health work.

The failure to grant the appropriation desired for school children's clinics is probably an honest reflection of the average citizen's attitude toward public health expenditures. It is with the sanction of the electorate, actually at its wish, that tomorrow's safety is mortgaged for today's economy. This goes on not only in New York City, but in nearly every city. Is the economy sound?

In order that there may be saved a few thousand dollars annually, must the nation resist its enemies of tomorrow with an army of weaklings, or must we take an insignificant place in the world's commerce for want of fit men and women to meet the new demands of great production and distribution?

It is high treason for a citizen to destroy or damage any part of the nation's armament. Ought it not also be treason for cities to damage by false economy the health of their own and the nation's citizenship?

THE FORSYTH DENTAL CLINIC OPENS

An Endowed Institution to Care for the Mouth Hygiene of the Children of Boston

The Forsyth Dental Infirmary for Children was founded by John Hamilton Forsyth and Thomas Alexander Forsyth in memory of their brothers, James Bennett Forsyth and George Henry Forsyth. It was incorporated in Boston in 1910 by a special act of the Massachusetts Legislature. The building is located at 140 The Fenway, and is easily reached by any Huntington Avenue, South Huntington Avenue, Brookline or Allston car.

Fig. 1. Forsyth dental clinic. The initial clinic room of 64 chairs.

The Board of Trustees is made up of the following members: Thomas A. Forsyth, president; Edward Hamlin, vice-president; Chester B. Humphrey, treasurer; Dr. Harold DeW. Cross, Dr. Timothy Leary, Dr. John F. Dowsley, Dr. Harold Williams, Dr. Ervin A. Johnson, Dr. Gurdon R. Mackay and Nelson Curtis.

The purpose of this institution is to care for the mouth conditions of worthy children up to the age of seventeen years. Care is given to the teeth, and attention also paid to adenoids, the tonsils, hare-lip, etc. The entire mouth will be made clean. The benefits of this institution are extended to all worthy children up to the age limit, regardless of sex, color or race. All children who are recommended by charitable organizations, clergymen, social workers or school nurses will be given attention.

Fig. 2. Forsyth dental clinic. The amphitheater.

The Infirmary will have a social secretary whose duty will be to follow up each case, and social workers to read to the children. The initial equipment consists of 64 chairs, and there is room for 44 additional ones. Just as soon as the institution is in running order it is expected that 500 patients per day will be cared for. In addition to the dental and surgical service chiefs, there will be about 80 graduate dental interns who will attend to the clinic, and all of these will be paid operators. A charge of five cents will be made for each visit, regardless of the nature of the work to be done.

There is a boys' and a girls' ward with four beds in each, which will be used for surgical patients. There is a large lecture room in the building, seating about 300 people, where lectures on "Mouth Hygiene" will be given to the public. The hours are from 9 a. m. to 5 p. m. the year around; the institution will not be closed during the summer.

The building was dedicated on November 24, 1914, with exercises in the morning, and tea in the afternoon. The building was open for inspection all day. Some of the speakers at the exercises were His Excellency, David I. Walsh, Governor of Massachusetts; Honorable James M. Curley, Mayor of Boston; Charles W. Eliot, President Emeritus of Harvard University; Thomas Alexander Forsyth, one of the donors of the building; Milton J. Rosenau, Professor of Hygiene, Harvard University; Donald M. Gallie, President National Dental Association; Edward McSweeney, Trustee of Boston Consumptive Hospital; William J. Gallivan, Chief of Bureau of Child Hygiene, Boston; Edwin T. Darby, Professor of Operative Dentistry, University of Pennsylvania; Prayer by Monsignor Splaine, and Benediction by Bishop Lawrence.

The Chinese, five hundred years before the dawn of the Christian era, had developed a regular hydrotherapeutic technic for the cure of skin diseases. In old Manchurian records are found descriptions of apparatus and procedure for administering the "water cure," which closely resembled the hydrotherapeutic department of modern hospitals.

PREVENTION OF BLINDNESS

MATERNITY

Conducted by CAROLYN CONANT VAN BLARCOM, R. N.,
Secretary National Committee for the Prevention of Blindness;
Chairman Committee on Infant Welfare, National Organization for Public Health Nursing.

Cleveland's Infant Eye Work

BY HARRIET L. LEETE, R. N.,

Superintendent of Nurses of The Babies' Dispensary and Hospital and The Bureau of Child Hygiene.

No argument is needed to prove the value of prevention in eye work. However, a report of Cleveland's work may be of interest.

The story of Jo, who was referred to the eye nurse when only a few days old, is a simple illustration of the value of nursing care and supervision; he was under the direction of the private physician who had confined the mother; there was a severe infection of one eye; this condition was improving, the physician had discontinued his visits and the nurse felt very hopeful, when, owing to the carelessness of the mother, the other eye became infected. The nurse realized that two things were essential if the baby's eyesight was to be saved; first, continuous skilled care for the eyes, and second, breast milk for nourishment in order that the child might gain his necessary resistance. She felt amply repaid for all her efforts when the child left the hospital entirely cured.

Susie was not so fortunate, as her mother did not hear about the eye nurses until her baby was fifteen months old; then when she called one of them in, told her story, and allowed Susie to be taken to an ophthalmologist for examination, she learned that Susie was entirely blind as a result of the non-registered midwife's carelessness at the time of her birth.

Anyone working with children under three years of age soon understands the necessity of having infant eye work and infant welfare work under the same medical direction.

From the economic view-point one can easily demonstrate that the city or state is making a wise expenditure of money when it contributes to the prevention of blindness. In Cleveland it costs the city $30 a year to educate a seeing child and $200 to educate a blind child. The visits of a nurse to prevent blindness, her time and carfare, plus the medicine, would not exceed ten cents a visit, the average number of which would be thirty to each case.

During the year 1914 the two nurses doing infant eye work visited 735 cases; of these cases 306 proved to be only simple conjunctivitis, 64 did not need any treatment, 328 had various diagnoses, while only 37 received a definite diagnosis of gonococcus infection. In addition to the 37 diagnoses of gonococcus there were many cases which presented so severe a form of infection that we feel sure at least 50 babies owe their eyesight to the prompt, persistent care and instructions of the nurses. It cost the city just $150 to save the eyesight of these 50 babies, their education now will cost the city $1,500 a year, instead of $10,000 a year; thus in their education alone the city is $8,500 a year richer. Deducting the $150 from the $8,500 saved, we find the city has saved $8,350 which might well be used towards financing other preventive work.

Nursing for prevention of blindness requires specially trained women, as so frequently clinical symptoms indicate what the necessary care must be, even though a certain diagnosis cannot be made from the examination of the smear—the nurse learns to recognize dangerous symptoms and to differentiate between these and simple conjunctivitis, or inflammation caused by the injection of silver nitrate. Even with all of her experience and trained observation she never takes the slightest chance by making a diagnosis; if the mother cannot afford to have a private physician, the nurse insists upon having the child taken to a dispensary for medical examination. If patients over three years of age are found whose vision is sufficiently impaired to require future assistance they are always referred to the Society for the Blind; through their social service department the child or adult is given every opportunity that can be secured in order that his handicap in life may be as nearly a minimum one as it is possible to make it. All eye cases over three years of age reported either to the Babies' Dispensary and Hospital or to the Division of Health are given to the adult eye nurse, who is also under the direction of the Bureau of Child Hygiene. This nurse, in 1914, had under her supervision 587 cases, and considered herself fortunate to have charge of such interesting and worth-while work. She, like the infant eye nurses, works under the medical supervision of private physicians and also takes many cases to special eye clinics in connection with the hospitals.

"Little Jo."

Newspaper publicity has always reached some mothers who otherwise would not know about the nurses, so we have throughout the year occasionally given to the daily newspapers illustrations and descriptions of the work.

There is also the closest cooperation with the Medical Inspection Department in the public schools, and we know that through the correlated efforts of all organizations Cleveland has been able to accomplish much towards prevention of blindness.

DEPARTMENT OF LIFE EXTENSION

Some Factors in Life Shortening

BY EUGENE L. FISKE, M. D.,
Director of Hygiene, Life Extension Institute, Inc.

Adding a mere mathematical increment to human life is not a particularly attractive field. Unless the elixir of life be discovered, we must reconcile ourselves to the thought of ultimate death. Whether this come in seventy-five years or in eighty years from birth is not a matter of any great importance, although it is quite possible that, with better knowledge of how to live, the span of human life may be extended well beyond one hundred years. If this result should come about, the most gratifying condition incident to such a development would be the change in the meaning and quality of lives that are so extended.

A death that is not due to accident or to some acute disease is the final result of some long-continued process of impairment or decay. Indeed, most cases of death from acute disease are actually due to underlying chronic conditions, which it may not always be possible to classify into any particular form of disease, but which are often a chronic condition of lowered resistance.

In the main, the forces that tend to shorten our lives are of the pin-prick order. They are continually at work, but their activity passes unnoticed until their cumulative effect is made manifest in some form of physical breakdown or until one is aroused to compare his present condition with that of several years past. It is only by comparing photographs taken at intervals of years that we recognize the encroachment of time.

It has been found that by brushing the teeth for ten minutes with an ordinary tooth powder or prepared chalk, the enamel is thinned to the extent of one one-thousandth of an inch. Such a slight wearing of the enamel would not, of course, be perceptible to ordinary observation over months of time, and only after years of such polishing would the loss of the enamel be observed.

Thus it is with many life influences. From day to day an error in diet, or in personal hygiene, may apparently be attended with no ill result, but in time the cumulative effect is felt.

With regard to certain influences, they can be measured fairly definitely in the mortality records. Take alcoholic indulgence, for example: a recent analysis of the experience of forty-three American life insurance companies developed very interesting evidence bearing upon the relative longevity of so-called "moderate" users of alcohol. For those who were accepted as standard risks, but who gave a history of occasional alcoholic excesses in the past, the mortality was 50 percent in excess of the standard mortality, equivalent to a reduction of four years in the average lifetime of the group. For individuals who took two glasses of beer, or a glass of whiskey, or their alcoholic equivalent, each day, the mortality was 18 percent in excess of the standard. For men who indulged more freely, but who were considered acceptable as standard insurance risks, the mortality was *86 percent* in excess of the standard.

The average individual who drinks within the limits of so-called moderation is not lacking in confidence in his longevity. He is skeptical as to any adverse influence from the use of one or two glasses of beer a day. But he has no means of measuring slight changes in his nervous system, in the blood vessels, heart, or kidneys, which may be brought about by such indulgence, because impairments of that description do not make their presence known until there is a serious disturbance in function, reflecting positive organic changes.

The extent to which various habits impair the human machinery cannot be accurately followed in clinics, at hospitals, in the laboratory, at the bedside, or in the consulting room. Mortality records, if they can be followed and compared among people who are homogeneous except as regards the particular form of indulgence under investigation, offer the most conclusive evidence. How often a death from typhoid fever or pneumonia is due to latent heart weakness or vasomotor weakness, brought about by indulgence in narcotics such as alcohol and tobacco, we have no means of knowing, but we do know that those who indulge steadily in these narcotics show a higher death rate.

In a discussion before the New York Academy of Medicine, Dr. L. Bolton Bangs called attention to the case of a patient who strangely failed to rally after an operation, until he was supplied with his accustomed cigarette, the doctor having a "hunch" that it was this missing indulgence that caused the condition. It was then suggested that there were probably many such cases where individuals accustomed to the use of tobacco and deprived of it following operations suffered just as alcoholics suffer and have to be supplied with their accustomed narcotic, even though its use as a drug would ordinarily be contraindicated in such conditions as typhoid and pneumonia.

Regardless of what one's views may be concerning the very moderate use of alcohol and tobacco, no one can question that any large group of individuals who use these narcotics will show, as a group, a higher mortality. Life insurance experience among users of alcohol is now quite extensive, covering in some companies more than sixty years of time. Experience among British companies is in accord with that of American companies. Very little life insurance experience is available regarding tobacco users, but it is hoped that in time life insurance companies will give more attention to this subject, and will require information on their examining forms which will enable statistical investigations to be carried on with regard to the mortality influence of this drug.

The laboratory evidence regarding the effect of tobacco justifies us in putting it down as a life shortener for the average individual. We have referred to the fact that the mortality in this country from degenerative diseases of the heart and blood vessels is increasing, while in England and Wales it shows a downward trend. In this country the per capita consumption of tobacco is more than three times that of the United Kingdom, and has increased about 50 percent in the past thirty years. Since 1904 the consumption of cigarettes in the United States has increased from 13,000,000 lbs. to 56,000,000.

Experiments made on college students and very carefully checked showed inferiority both in athletics and in scholastic standing among smokers as compared with non-smokers.

Those who have closely observed our college youth have

been impressed with the adverse influence of tobacco not only upon scholarship but upon athletics. Dr. Pack, of the University of Utah, in analyzing the football squad, as ideal a homogeneous group as could be found, developed the following facts:

1. Only half as many smokers as non-smokers are successful in the "try-outs" for football squads.

2. In the case of able-bodied men, smoking is associated with loss in lung capacity amounting to practically ten percent.

3. Smoking is invariably associated with low scholarship.

If tobacco undoubtedly affects the physical and mental condition of vigorous young athletes, why should such an influence suddenly turn into a harmless factor in mature life? There is really no physiological or pharmacological justification for such a view, and those who use tobacco must take the risk of lowered efficiency and of life shortening.

AN UP-TO-THE-MINUTE FIELD HOSPITAL

Belgian Hospital at Calais Prepared to do Scientific Surgery as Routine Practice.

A medical expert who has been inspecting the various field hospitals of the allies in the western theater of war declares that the Queen Elizabeth Hospital at Calais is a model and the best that he has seen. The hospital is under Belgian control and all of the patients are Belgian soldiers. The x-ray room is described as one of the most completely equipped in France. According to the expert the apparatus consists of an electric instalment of enormous power, so planned as to permit the taking of instantaneous x-ray photographs by the mere manipulation of a lever and in the space of a fraction of a second. This is especially useful in the case of a patient who is in great pain, or is unable to remain quiet in one position. He is detained in the x-ray room only a second or two, and a beautifully clear print is secured. Moreover, the danger of burns to the operator is minimized, because there is no prolonged exposure. So instantaneous is the operation that it is impossible to detect any lighting up of the x-ray tube.

A stereoscope is fitted in the room and affords an interesting demonstration of the application of scientific principles to modern science. By the use of this, two x-ray photographs are taken simultaneously, and on looking at them through a specially arranged stereoscope apparatus a very perfect stereoscope picture is seen. In this bones and foreign bodies, such as bullets and pieces of shell, stand out in perspective, making it possible to determine their relation to one another in a manner which is very instructive from the point of view of the operating room. The surgeon is able to gauge the depth of a bullet as well as its position.

Another interesting departure at the Queen Elizabeth Hospital is the ultra-violet rays water sterilizer. This purifies water through the use of the ultra-violet rays of the spectrum. This sterilizer has the advantage that it requires no attention, does not boil the water, and does not alter its taste. Moreover, by a clever device, the water is cut off at once should the electric current which generates the rays fail.

The American Hospital in Paris

Dr. George W. Crile, of Cleveland, who has returned to this country after a stay of six weeks in Paris, at the head of a division of the American Ambulance Hospital, is quoted as saying: "From my own observation and from talks with military and professional authorities, I have no hesitation in saying that the American Ambulance is the finest hospital produced by the war, and this is the unanimous opinion of the authorities with whom I talked. The hospital is known throughout Europe and the great work that is being done there is widely recognized."

SOCIAL HYGIENE
VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
General Secretary, The American Social Hygiene Association,
105 West Fortieth Street, New York City.

The Value of Hospital Statistics on Venereal Diseases

On November 7, 1913, there occurred in London the first hearing before the Royal Commission on Venereal Diseases in the United Kingdom. The recently published "Minutes of Evidence," taken before this commission during the first thirty-five sessions at which witnesses were examined, are full of interest to all who are studying the problem of reducing the prevalence of venereal diseases and alleviating the illness and economic waste caused by them. The following selected and abridged quotations suggest the opportunity that exists in the United States to enlist hospital staffs in assembling information in this field:

Minutes of First Day:

(Lord Sydenham, Chairman; Dr. T. H. C. Stevenson, witness.)

Chairman: You are Superintendent of Statistics of the Registrar General? Ans.: Yes.

Chairman: Your figures depend almost entirely upon death certificates, either given by private practitioners or medical officers of the various institutions who return them to you? Ans.: Yes, about 7 percent founded upon the verdict of coroners' juries, and about 1½ percent refer to uncertified deaths.

Chairman: So the value of those certificates probably varies considerably in different cases? Ans.: Yes. I should say in relation to syphilis the value is very much higher in the case of institutional deaths than in the case of deaths outside of institutions.

Chairman: Turning to your tables on the general returns of deaths from all causes, those two items of syphilis and gonorrhea are the only two that bear directly on our inquiry? Ans.: We have deaths also from locomotor ataxia, and general paralysis of the insane, and aneurism, which I think have a very intimate connection.

Chairman: Do you think there is any considerable reluctance to certify deaths—of adults at all events—as due to one of these diseases? Ans.: I am quite satisfied that there is the very greatest reluctance.

Chairman: And might we believe that the certificates which are obtained from institutions are much more likely to be accurate than those which are obtained from general sources? Ans.: I think there can be no doubt of that.

Chairman (Dec. 19): Since you gave evidence before me on the last occasion you have made a considerable number of fresh investigations of a statistical character, which have led you to form conclusions which seem to be of considerable importance? Ans.: Yes.

Chairman: The two causes which operate to vitiate the returns are, first of all, the delicacy of the medical practitioner in his relation to the family and secondly, the question of insurance in some cases? Ans.: I believe those are the two main points.

Chairman: You have instituted a comparison between institutional deaths and deaths in the home, and you have given us some tables. What do you argue from these (sets forth various percentages)? Ans.: What seemed to me the most reasonable conclusion was that, in the case of syphilis, and especially of adult syphilis, the institutional percentage was artificially raised by reluctance on the part of the medical practitioners to certify that disease as the cause of death when the death did not occur in an institution. I presume that the medical officer of an institution feels that he has a much freer hand in regard to certifying the real cause of death in such cases than a private practitioner, who may damage his practice by taking such a course.

Chairman: You mean generally that concealment of cause arises in regard to deaths which do not occur in institutions? Ans.: I think at all events it is much more marked and probably carried much further.

Chairman (March 16; Dr. Douglas White, witness): You have made a special study of the question of the prevalence of venereal diseases, have you not, and have followed the movements in combating these diseases in foreign countries to some extent? Ans.: That is so.

Chairman: We hope to get fairly good results of a statistical character from hospitals and institutions dealing with the invalid population. But when it comes to spreading those over the civil population the difficulty is very great? Ans.: Yes, it is very great, because you have to rely on the individual physicians.

Chairman: You, of course, are aware of the flaws in the Registrar-General's figures, and that a great many deaths which should be attributed to syphilis are not attributed to syphilis, and if it was not that general paralysis and tabes are not known generally to the public as being so connected we should not have those figures? Ans.: Yes, the Registrar-General's figures must be extremely defective. At the same time, I think that they have a quite definite value of a relative character; that is to say, supposing we wished to find what proportion the

female deaths bore to the male deaths, I think we should find ourselves accurately guided by these figures. Again, if we want to find what proportion of children and adults die, I think we would get a true proportion, although the absolute figures would be hopelessly out.

Chairman: So you regard these figures as valuable for relative purposes? Ans.: Yes, certainly; and very nearly for absolute purposes as regards diseases which have not, up to the present, been viewed by the public as indications of syphilis. There is no reason why there should be any inaccuracy beyond a few omissions, of course, in cases of aneurism, general paralysis, or tabes.

Chairman: Then you attach greater importance to deaths from these three diseases than to the deaths returned under syphilis? Ans.: Very much more.

Chairman: One possible flaw in your argument is that the returns from institutions are generally much more accurate than those of people who are treated in private houses. Therefore, institutional treatment would tend to show a greater prevalence in towns than in the country. That, of course, has occurred to you? Ans.: Yes, that is to say, people would be registered as dying from these diseases at the towns where they had lived. I understand since 1911 that system has been given up, and they are now allocating the people who die in institutions to the places where they have lived.

Chairman: But still you arrive at the conclusion that the larger the city the greater the proportion of sexual disease, and I suppose that is fortified by a good many figures? Ans.: Yes.

Chairman: Then the result of this calculation (referring to special tables relating to syphilis) is that as far as the United Kingdom is concerned, about 28,000 women and 86,000 men contract syphilis annually. Then you go on, "If the expectation of life for a syphilitic (acquired at an average age of 24) be 30 years, which is not unreasonable, there must be in the United Kingdom some three millions of syphilitics, allowing for a fair proportion of cures"? Ans.: I think that if one grants the annual incidence, one is almost bound to grant the other, because I find, on looking up the figures of expectation of life, that the expectation of life at the age of 24 is very nearly 40 years, and one cannot think of syphilis as likely to cut down that expectation of life by at any rate more than 10 years at least, I should doubt it. Of course, in the unfortunate cases which fall under general paralysis and tabes, the expectation of life would be very much less. On the other hand there would be a very large proportion who would not be very greatly affected. I think 30 is not an unreasonable figure anyhow.

Chairman: Then you think the calculation of 3,000,000 of syphilitics is not an excessive calculation? Ans.: I am not inclined to think so.

Chairman: Then you also assume that the distribution of venereal diseases follows the same proportion as syphilis? Ans.: Yes, that some people might take for granted. But it just occurred to me that it might be fallacious, and I looked up the figures of this Prussian return, and found quite distinctly the proportion of gonorrhea to syphilis appears, very roughly of course, but it does appear to go down as towns increase in size; that is to say, as the town gets smaller there seems to be a tendency to a greater prevalence of syphilis to gonorrhea.

Chairman: Assuming that in England we have this proportion of six to one, you arrive at 114,000 cases of syphilis annually for Great Britain; 686,000 cases of gonorrhea and chancroid; and of the 686,000 we may perhaps suggest, resting on the army returns, that one-quarter are chancroid and the rest gonorrhea? Ans.: Yes; that is the nearest approach we can get to a sound estimate on the indirect method.

Chairman: That is an estimate of the total infections in the year in the United Kingdom? Ans.: Yes, it is 800,000 divided up into those proportions of six to one.

Chairman: Now, if we assume 800,000 fresh infections yearly, you say the figures would involve some 450,000 fresh individuals who had previously not been infected? Ans.: That is so. I do not mean 800,000 persons but 800,000 fresh infections of whom probably about 450,000 are fresh individuals.

Chairman (Dr. Stevenson, witness): Turning to another part of your evidence; then you come to the conclusion that gonorrhea as a cause of death is frequently concealed. Will you explain your views on that point? Ans.: In view of what gynecologists tell us as to the seriousness of gonorrhea, especially in females, and the number of deaths that are really attributed to it as the starting point of various local inflammations, I think there can be no doubt that we only get a record of a small proportion of the total cases which might be recorded as due to gonorrhea.

Chairman: In fact, you come to the conclusion that the death rate affords no indication of the large female mortality from gonorrhea? Is there any prospect of some better tabulation being introduced in the future, which would give an index to the larger number of deaths to which you refer? Ans.: I think it is not a question of tabulation so much as one of certification. I am afraid until means can be devised for obtaining a candid certification of this class of cases, that we shall have no material that, however tabulated, would afford reliable returns.

Chairman (Dr. R. W. Johnstone, Medical Inspector Local Government Board, witness, Nov. 13, 1913): I understand from your report you think the hospital accommodation at present provided for the treatment of venereal disease is much too limited? Ans.: Absolutely. At the time of my inquiry the only beds specially provided in London for venereal diseases in their early stages outside the Poor Law nstitutions were those in the London Lock Hospital. At the present moment, the male branch of the hospital is being rebuilt, and in consequence only one or two emergency beds are at present available for males.

Chairman: Do you know why it is that advanced cases of syphilis and complications of gonorrhea are freely admitted, as you say, but early cases are not treated? Ans.: Because people have got the idea that the early cases are so much more infectious. That is true, and it was on the ground of infectivity that objection was generally raised when the matter was discussed. I have had many discussions with hospital secretaries and surgeons and physicians. Occasionally they object very much. Some say that their staff are not properly prepared for it; they would get infected. Others put it on moral grounds. I had one letter from a surgeon of a London hospital, who is a very well-known man, after my report came out, in which he said he had given a few of his beds for the Salvarsan treatment, and that he had had a great deal of unpleasantness amongst his colleagues about it. So that even the medical side seems to object to bringing in the early infective cases, the ones we can cure and the ones we want to get in.

Chairman: I suppose your general deduction from all these inquiries is that far more facilities for treatment, and especially early treatment, are most wanted? Ans.: Yes, I think from the public health point of view as regards the new development of treatment, the important thing is not whether it is going to cure people in the end, because there is still mercury, but that the infective stage can be terminated much more quickly. It makes early treatment for preventive purposes a practicable thing.

And so the testimony reads through over four hundred pages, covering every phase of the social hygiene field. One cannot read this evidence without realizing that it is possible to chart the unknown seas of venereal disease statistics, if we go about it seriously in the United States; and realizing also that our hospitals and institutions offer a most promising approach.

The quarterly journal, *Social Hygiene*, for March, 1915, contains a valuable article by Surgeon Banks[1] on a study of venereal diseases treated by the United States Marine Hospitals during the past twenty-five years. The article concludes with the following paragraph:

"If we were starting fresh today, an uninfected nation, it would take 33 years at the rate of 3 percent annual infection to syphilize the entire body politic, but each year brings in a new class of the clean humankind and automatically reduces the ratio. The experience of the past is probably not different from the present, and the obvious conclusion as to the percentage of 'damaged goods' we have with us, as affected by our remote ancestors, is not obvious at all. It is beyond the practical possibility of determination, because of the existence of so many factorial modifications, such as attenuation, immunity, and accident. The real interest centers practically in facing the problem for the future, not in estimating the exact damages of the past. It is a campaign for prevention, and we can start out by saying that we have to meet with nearly two and a half million cases of venereal diseases annually treated in the United States—about one person in every forty."

The report of the Wisconsin State Vice Commission, November, 1914, includes the following:

"The committee sent a questionnaire to the hospitals of the state, requesting certain information regarding venereal disease in these institutions. Seven hospitals replied, and furnished data sufficient to enable the committee to compile the following statistics:

"Of a total of a little over 16,000 cases treated by the seven hospitals replying to the questionnaire, 870, or 5.4 percent, were treated for a venereal disease. Two and seven-tenths percent of the total number of cases treated by the hospitals were cases of syphilis, and 2.6 percent were cases of gonorrhea. Of the 870 cases of venereal disease, 50.4 percent were cases of syphilis, and 49.5 percent were cases of gonorrhea, showing that the whole number of venereal disease cases was about equally distributed between gonorrhea and syphilis. Thirty-three percent of those treated for gonorrhea were women, and 67 percent were men. Thirty-one and two-tenths percent of those treated for syphilis were women, and 68.8 percent were men, showing that in these institutions about two-thirds of the cases of venereal disease were men. Of the women treated for venereal disease, 58 percent were single, while 42 percent were married. Of the men treated for venereal disease, 71 percent were single, and 29 percent were married. It will be noticed that there is a discrepancy between the total number of cases of venereal disease and the number of married and single cases given. This is accounted for by the fact that certain hospitals did not give complete data on the question of civil status of patients. In the operation to determine the proportion of married and single men and women to the total number of those treated for venereal disease, the number 808 was used as the basis instead of 870. Eight hundred and eight is the number regarding whom the facts of civil status were given by the hospitals.

"Mention has been made in another section regarding the advisability of establishing public clinics in this state for the free diagnosis and treatment of venereal disease. Such clinical laboratories are maintained by New York City, Syracuse and several other municipalities. These laboratories prove of great service not only to the persons who come directly to the expert in charge for tests made to determine the presence of the gonococcus or the syphilis germ, but also many physicians send in specimens to be tested in the laboratories. This public service is a long step toward the treatment of venereal disease as a real and important public health problem. The great prevalence and damage of gonorrhea and syphilis to child and adult alike demands activity on the part of public health authorities, in order to meet the emergency. In another section of this report, the committee strongly recommends the establishment of public clinics and free wards or hospitals for the treatment of venereal disease. The state of Wisconsin, which has been on the firing line of progressive measures, should not fall behind the other states in providing adequate and widespread facilities for the treatment of the two most insidious and dangerous diseases with which the human race is afflicted."

The American Public Health Association has appointed a Committee on Venereal Diseases[2] which is studying the venereal disease problem in this country, and the American Medical Association has planned, through its Section on Hospitals[3], to hold a symposium on venereal diseases in San Francisco in June, 1915.

It is desirable that every reader of THE MODERN HOSPITAL who knows of good work being done on the statistical or other phases of the venereal disease problem should communicate with these two national committees.

[1] "Social Hygiene," Vol. I, No. 2, pp. 220 to 226.—Venereal Disease—Its Probable Prevalence—An Attempt to Reach a Definite Basis of Statistical Value. Also published, Feb. 26, 1915, U. S. Public Health Reports.

[2] Committee on Venereal Diseases—Dr. William F. Snow, Chairman, 105 West 40th street, New York; Dr. John N. Hurty, Secretary, State Board of Health, Indianapolis, Ind.

[3] Dr. John A. Hornsby, Secretary of Section on Hospitals, A. M. A., Tower Building, Chicago, Ill.

DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
Director of the Boston Dispensary.

Question Box

Readers of THE MODERN HOSPITAL are invited to send questions concerning any features of dispensary organization, equipment or administration to the editor of the Department of Dispensary and Out-patient Work, THE MODERN HOSPITAL, Tower Building, Chicago, Ill.

The best available experts will be secured to answer questions and, if questions and answers are of general interest, they will be printed in these columns.

New Features in Dispensary Work

The Committee on Out-patient Work of the American Hospital Association has just sent to about 400 dispensaries and out-patient departments a blank form inquiring as follows:

What new features in construction, equipment, organization or methods of your dispensary were introduced during 1914?

The blank goes into detail beyond this one question, but all the questions are along the same lines and several interesting points ought to be brought out. This information, if gathered each year, as the committee hopes it will be, is to be placed at the disposal of all institutions by including the salient facts in the annual proceedings of the American Hospital Association, and thus a running annual summary of the progress of dispensary work and the improvement in dispensary methods will be in the hands of everyone interested.

The present list of dispensaries and out-patient departments is necessarily incomplete. *Superintendents of hospitals or dispensaries who have not already received this blank from the committee will confer a great favor by sending their names and addresses to the Chairman, Committee on Out-patient Work, 25 Bennet Street, Boston, Mass., so that he can place them on the list and later enlist their cooperation.*

The First Dispensary in the English-Speaking World

In 1665 the great conflagration which devastated London brought in its fiery train a blessing, for it rid the city of plague. But the germs of poverty cannot be burned up, and the sickness and misery that follow poverty were so apparent to the public-spirited members of the medical profession of London that in 1687 they voted that all members of the College of Physicians, their professional organization, should give their services to the poor without charge. In due form they transmitted this resolution to the Lord Mayor and Aldermen. When, however, the charitable-minded sought to call the good physicians to the service of the poor, no means were found of providing the medicines which the doctors wished to prescribe. The pharmacists of London were at that time organized as a guild, the so-called Apothecaries' Hall; and Apothecaries' Hall would not lower its prices, even when the College of Physicians requested it on behalf of the poor.

The physicians did not sit idle under this monopoly in the prescription market. Fifty leading spirits signed an agreement on December 22, 1696, to pay ten pounds apiece to Dr. Thomas Burwell, one of their number, which sum Dr. Burwell was to use for medicines for the poor. Thereupon the first dispensary in the English-speaking world was opened in the building of the College of Physicians.

During the first five years of its existence we do not know how many patients the doctors treated, but it is recorded that 20,000 prescriptions were given out. The physicians, however, complained that the dole of medicines was more highly regarded by the public than the freely given services of the physicians. We do not find this first dispensary mentioned in Addison's *Spectator;* but if the sentiment of the educated London public could have been gauged, we should probably find that the dispensary was regarded as a medical soup kitchen. Medicines and medical service alike were doubtless thought of as a dole to the needy.

In the two hundred years since 1700, medicine has been transformed from a rule-of-thumb practice to a growing science, and dispensaries today are no longer medical soup kitchens, but are regarded rather as Institutes of Public Health.

Dispensaries Cooperating in Public Health Work

A meeting was recently called under the auspices of the Boston Association for the Relief and Cure of Tuberculosis to discuss the protection of the public against contagious disease, spreading from diseased persons handling eatables in restaurants, bakeries and other places where food is kept, cooked or sold.

One of the features of the meeting was a number of case reports secured from dispensaries in the city, which, without mentioning names, gave concrete instances of patients in the tuberculous stage who were employed in well-known hotels and restaurants. Syphilis was also mentioned in the same connection. Such examples as the following show a practical way in which dispensaries can cooperate with public health agencies without violating the privacy of medical information:

A negro waiter, serving at a well-known Boston hotel, was found to be an active second-stage case; he was removed from his work and sent to the Mattapan Infirmary.

An Irishman, a waiter, in the first stage, but an unpromising case, and also an alcoholic, was sent to the State Sanatorium at Rutland and from there transferred to the Psychopathic Hospital.

A Greek, a waiter, was in an advanced stage of tuberculosis; he refused treatment and was finally sent back to Greece.

An Englishman, waiter at summer resorts and during the winter in a city restaurant, was a second-stage case; also infected with blood poisoning. He was sent to Mattapan, but ran away from there after two weeks and when last traced was still working as a waiter.

A bartender, working from twelve to sixteen hours a day, was an advanced second-stage case, but he returned to his work after a short absence for treatment, not improved.

A Syrian, cook in a well-known Boston hotel, was in the second stage; he was sent back to Syria.

A pastry cook, an active case, had worked seven years in a prominent Boston hotel.

A restaurant cook was found to be a third-stage case.

An Italian cook in a hotel, also an active case, was ordered out of his place by the Boston Board of Health, and was sent back to Italy.

The second cook in a well-known Boston restaurant was

a very advanced case of tuberculosis and was sent to a hospital to die.

Is not the cooperation with such movements as this, to protect the public against dangerous diseases, a service in which every dispensary should bear a part?

A Dispensary Health Center

Most dispensaries are established for the treatment of sick people. Here is a dispensary which is organized not only for that purpose, but also to keep people well. The Maverick Dispensary, in its fifth annual report just issued, tells about this work as a Health Center. This dispensary is in East Boston, which, while a part of the city of Boston, is on a peninsula, almost an island, isolated from the rest of the city. The Maverick Dispensary, as it is named, is the only institution of its kind in this community of 60,000 population.

The annual report states the policy of the institution as follows:

Since Boston is well provided with large and excellent hospitals and dispensaries, a small dispensary serving a local area should not compete with them. Many patients will, however, come to a local dispensary, with minor diseases or with serious diseases in early stages, who would not travel a long distance and would wait until the disease was more serious before they went to a large centrally located institution.

The Maverick Dispensary, therefore, treats minor diseases and such other conditions as can properly be diagnosed and treated in a small institution. Serious diseases and doubtful questions of diagnosis are referred to one of the larger hospitals or dispensaries. Last year actually one-third of all the fifteen hundred medical and surgical patients received were thus referred.

Thus in the diagnosis and treatment of illness, this local dispensary aims to catch disease in its earlier stages and to assist patients, who cannot afford to pay the doctor, to go to that particular institution in the city which is best adapted for the diagnosis and treatment of the disease which they may have.

As a means of preventing disease, the Maverick Dispensary has made itself a Health Center. The physician of the dispensary receives a moderate salary, and is also employed by another organization (through a joint committee with the Maverick Dispensary) as a district physician for East Boston, to visit and treat in their homes patients who are too poor to pay a physician and too sick to leave their homes. In the dispensary building are the headquarters of the District Nursing Association of Boston, so that all the nursing in the homes is intimately coordinated with what is done in the dispensary. Furthermore, in the dispensary building is the local office of the Milk and Baby Hygiene Association, which maintains a milk station and a clinic for advice to mothers with babies. The nurse attached to this clinic has her office in the building also. Finally, a clinic for prenatal work with an obstetrical service, for those requiring it, is also in the building through the cooperation of another committee.

Thus, all the chief health organizations concerned with work in this community have pooled their interests through cooperative committees and united them in the one building maintained by the dispensary.

One interesting feature of the Maverick Dispensary's report is an efficiency test of the dispensary work, prepared by the physician-in-chief, Dr. Arthur B. Emmons, 2d, which follows:

EFFICIENCY TEST OF THE MEDICAL AND SURGICAL PATIENTS ADMITTED TO THE MAVERICK DISPENSARY, FEBRUARY 1 TO JUNE 1, 1913 AND 1914

	1913	1914
Patients transferred for care by other agencies	185	120
Patients for whose care the Dispensary retained responsibility	264	263
	449	383

	1913		1914	
	No.	%	No.	%
Patients cured or substantially relieved, averaging 4 visits per patient	90	34.6	79	30.0
Patients relieved in one treatment—minor complants	45	17.3	127	48.3
Patients who made only one visit, result not determined	35	13.4	15	5.8
Patients who ceased to return before completion of treatment	38	14.6	30	11.4
Patients who continued treatment without improvement	2	.7	6	2.3
Patients who came for diagnosis or examination for working certificates	25	9.6	—	—
Patients who refused examination	—	—	3	1.2
Patients who are known to have died	—	—	1	.3
Cases pending at time figures were prepared	5	1.9	—	—
Cases unclassified	24	9.0	2	.7
	264	100.0	263	100.0

EFFICIENCY SUMMARY

	1913	1914
Positive results	71.0%	78.3%
Negative	27.0%	21.0%
Pending	2.0%	.7%
	100.0%	100.0%

Nebraska Orthopedic Hospital Opens New Building

The Nebraska Orthopedic Hospital, at Lincoln, is just about to occupy a beautiful new building. The work of this institution has grown very rapidly since its inception in 1905, and the legislature of 1913 appropriated $45,000 for an additional building to supplement the five already occupied. The new structure is of reinforced concrete four stories high and of modern hospital construction in every detail. A feature of the building is the connection of floors by inclines instead of stairways or elevators. This is with the idea of making the crippled children as nearly independent as possible in getting from one part of the building to another.

The basement of the building contains four school rooms (one a study room and laboratory for nurses), a serving room and two large dining rooms. The first floor has a lobby, four office rooms, two reception rooms and a library. The second floor has wards and rooms for fifty patients, with serving room, baths, etc., while the upper floor is entirely set aside for the surgical department with operating, plaster of paris, sterilizing, surgeons' and nurses' dressing rooms, shower baths, etc.

All the hallways, inclines, bath rooms, etc., have terrazzo floors, while the wards, offices, etc., have maple. The interior woodwork is of birch and oak, with heavy plain doors. The lighting provided for is all indirect or semi-indirect and entirely new surgical equipment has been ordered. The capacity of the hospital will be increased to 150 patients.

Dr. H. W. Orr is the superintendent, and Dr. John P. Lord, of Omaha, chief surgeon.

Extracting Metals from Human Bodies

An Englishman has secured American patent rights on a simple method of extracting metals from the human body. His plan is to have a patient place both hands in a conducting liquid contained in a suitable receptacle, and both feet in another receptacle filled with conducting liquid; electrical connection being thus established through the body. It is stated that certain metals in the body will thus be extracted and deposited on the electrode placed in the foot bath. Such a system would probably be of great aid in treating lead or mercury poisoning.

LETTERS FROM OUR FIELD EDITORS

Improvements at Vancouver General Hospital

The first wing of a 300-bed Nurses' Home has been completed and opened up. This magnificent structure of reinforced concrete, with a fine exterior of Medusa finish, contains 100 bedrooms, besides numerous sitting rooms, assembly hall and class rooms. The cost was approximately $135,000. The other wings will be proceeded with as soon as more money is available. The building when completed will cost approximately $500,000.

The new administration and service wing has also been completed and opened. This addition cost $100,000. Throughout the idea of concentration and economy of labor was kept in view. This wing concentrates most of the administration and service work of the hospital. It contains the dining rooms, administration offices, emergency department, pharmacy, store room and refrigerating plant. On the top story is the main kitchen having a capacity of from eight to ten thousand meals per day.

The advanced tuberculosis building completed last September is a solid, reinforced concrete building, ideally laid out for the treatment of these cases. It has been loaned to McGill College for a short time to carry on their work, owing to lack of room in their old building, but, on the commencement of the University of British Columbia, will be vacated. This building accommodates 100 patients, but only the advanced cases are taken, as incipient cases are treated at Kamloops, B. C. The cost of this building complete is approximately $95,000.

The new pathological building almost completed will cost in the neighborhood of $16,000 and provides abundant modern facilities for carrying on the pathological work of the hospital and city.

Work has been commenced on the alterations to the central part of the main building where approximately $75,000 will be spent in the installation of our new operating rooms. These will be seven in number, three devoted to the specialties and four to general surgery. The alterations will also include a new eye, ear, nose and throat department. In this the best material and skilled workmanship will be used and when finished we will have a most modern department. The plans and specifications for these alterations are the outcome of a great deal of thought on the part of the hospital authorities. Some 59 hospitals of note in Canada and the United States have been visited and data secured. The work will be completed in the course of six months.

MALCOLM T. MCEACHERN, M. D.,
Superintendent.

The Associated Charities of Kansas City, Kan., have opened a free dispensary for the treatment of diseases of the eye, ear and throat. It is open every afternoon from 12 to 2; for general medicine on Tuesday, Thursday and Saturday afternoons, and for diseases of children on Monday, Wednesday and Friday afternoons.

LETTERS TO THE EDITOR

Hospital Architects and Competitions

Wichita Falls, Texas, March 15, 1915.

To the Editor of THE MODERN HOSPITAL:

In your March number there appears a letter from Mr. Meyer J. Sturm, regarding Dr. Bartine's article on "Building the Hospital," which was published in the February issue. In this letter Mr. Sturm makes some statements so startling as to be worthy of comment.

For instance, he avers that there are fifteen architects in America, or maybe it is the world, that are competent to design a hospital. Who would have thought there are so many? And of these fifteen there are five who are experts. Why this shrinking modesty, why this admission that there are four others?

Mr. Sturm also makes some further revelations for the benefit of the public, as follows: That he has sacrificed general practice to specialization in hospital work; that he has done nothing but hospitals for twelve years; and that he read a paper on architectural ethics before the first convention of architects ever held in Illinois. I sincerely trust that the publicity attending these remarks will work no undue injury to Mr. Sturm's business.

I doubt that Mr. Sturm's unqualified charge that less than 10 percent of all competitions are honestly conducted is borne out by facts. There are many instances where competitions are advisable and necessary. Dr. Bartine states that they are the "least desirable method," and with this we all agree. But undesirable and dishonest are different adjectives. The undesirable features of competitions are usually due to ignorance of proper architectural standards on the part of the board and not to crookedness. I think it would be better to recognize this fact and try to remedy it than to arbitrarily condemn competition on general principles.

I fully agree with Mr. Sturm that Dr. Bartine's article is complete in itself and I wish it were published in pamphlet form so it might be used to give boards of prospective hospitals the information they need on selecting architects, as well as many other points.

E. STANLEY FIELD.
(Field & Clarkson, Architects.)

Dish-Washing in the Hospital—A Criticism

Philadelphia, February 15, 1915.

To the Editor of THE MODERN HOSPITAL:

The November issue of THE MODERN HOSPITAL carried an article on "The Hospital Kitchen." One paragraph, "The Dish-Washing," was of course interesting to us. That paragraph is misleading. It takes as an accepted fact, that mechanical washing of dishes, where ward kitchens are maintained, is not to be considered.

To show that mechanical dish-washing under the above conditions is an economical and sanitary improvement, we are able to quote Dr. Clemmer, General Director of the Hahnemann Hospital, Philadelphia.

Dr. Clemmer states that an Insinger dish-washing machine, drawing dishes from and distributing to seventeen different points, enables one man to do the work formerly done by five maids. It also enables the hospital to have sterile dishes, which was impossible under the old system of washing on the wards.

THE INSINGER CO.
By A. H. Insinger.

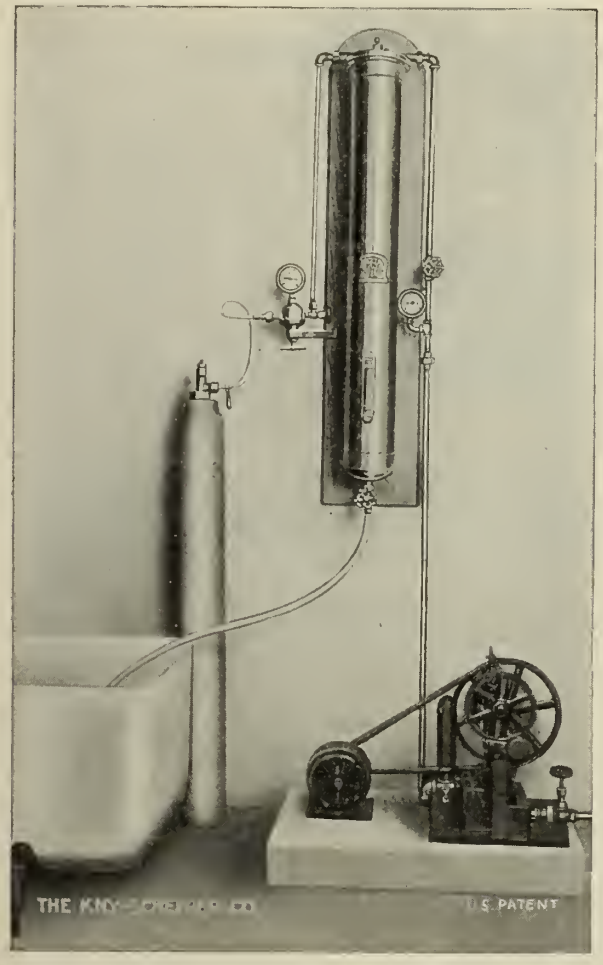
Dr. Henry B. Carriel, for fifteen years superintendent of the Jacksonville (Ill.) State Hospital, has resigned and Dr. Edward L. Hill, of Red Bud, Ill., has been appointed.

NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

New Carbonic Acid Gas Mixer for Preparing Artificial Nauheim Bath

As the value of Nauheim carbonic acid gas baths in various ailments (especially in cardiac affections) has been clinically demonstrated, thousands of people from all



Carbonic acid gas mixer for preparing artificial Nauheim baths.

over the world have been traveling every year to Nauheim, Germany, in order to avail themselves of the benefit derived from these baths.

It has now been found quite possible to produce these baths artificially. The patient derives from the taking of them the same beneficial results as obtained in Nauheim. The saturation of the water with carbonic acid must be accomplished so as to form a myriad of diminished gas bubbles uniformly distributed throughout the contents of the bath tub.

A new apparatus has recently been designed, called the Carbonic Acid Gas Mixer, by means of which, it is claimed, a perfect mixture may be produced. With the aid of this apparatus a physician or hospital attendant can easily prepare a carbonic acid bath and can rely on the water to retain the carbon dioxide for the required period.

The apparatus consists of a nickel-plated copper cylinder 5 inches in diameter and 5 feet long (see illustration). It is attractively mounted on a board with the necessary pressure gauges and controlling valves, and can be fastened to the wall above the tub in which the bath is to be given.

In order to obtain the best results, a minimum water pressure of 50 pounds per square inch is required, and with this pressure a volume of charged water is delivered into the tub at the rate of 3 gallons and upward per minute. Where a 50-pound pressure is not available, either a small auxiliary electric motor force pump, specially constructed for this purpose, or a hand pump, is required.

As water having a higher temperature than 60 degrees Fahrenheit cannot be charged successfully with carbonic acid, it is necessary when preparing the bath first to fill the bath tub with carbonated water, about one half of the entire quantity required for the bath, and then to introduce hot water, sufficient to bring the entire quantity up to the desired temperature.

The mixing with hot water, however, should be done very carefully, introducing the hot water by means of a rubber hose under the surface of the carbonated water, so as to prevent the escape of carbonic acid on a large scale.

It is stated that no technical knowledge is required in operating this mixer, as the action of the apparatus is very simple and can be absolutely relied upon.

Dr. Walsh's New Hospital Crib

This crib, designed by Dr. W. H. Walsh of The Philadelphia Children's Hospital and made by the Whitcomb Metallic Bedstead Company, incorporates an entirely new feature in crib construction. The desire has been to have a sliding crib that would do away with the objection to

Dr. Walsh's hospital crib.

ordinary sliding rods now in use, that they are liable to be bent, causing the side to bind, thereby preventing its moving easily up and down. This crib has a special chan-

nel on the posts in which the sides move freely without binding. A new hook with specially designed jaws serves to catch and hold the sides secure when the side is raised. The size of the crib is 2½ feet by 5 feet, which is the most useful size in a hospital treating only children under twelve years of age. The crib, however, can of course be made any dimensions.

The head and foot are each 52½ inches high, and wooden plugs have been inserted with domes of silence in place of ordinary casters. In the head and foot there are seven 5/16-inch fillers set into the top rod and cast with smooth, chilled castings. Around the bottom rod there is a half-inch tie rod in head and foot. The head and foot are of half-inch brazed sheet steel tubing in continuous posts. The spring is of two-tinned national fabric, stretched on angle sides and dovetailed for the head and foot ends. The spring is 26 inches above the floor, making it very convenient for nurses in handling the patients and making up the beds. The sides are 25 inches deep, and when rolled to top of side come three inches above the springs in order to be flush with the top of the mattress. The top and bottom rods of the side are 5/8-inch steel tubing with fifteen fillers, 5/16-inch and 3/8-inch. The special channels are concaved to fit in close contact with the posts and are bolted on to the posts with countersunk screws. The channels are enameled with the crib, thus closing all crevices and openings.

Electrically Driven Motor Saws and Burrs for Surgical Bone Work

Designed by Dr. Chas. Geiger.

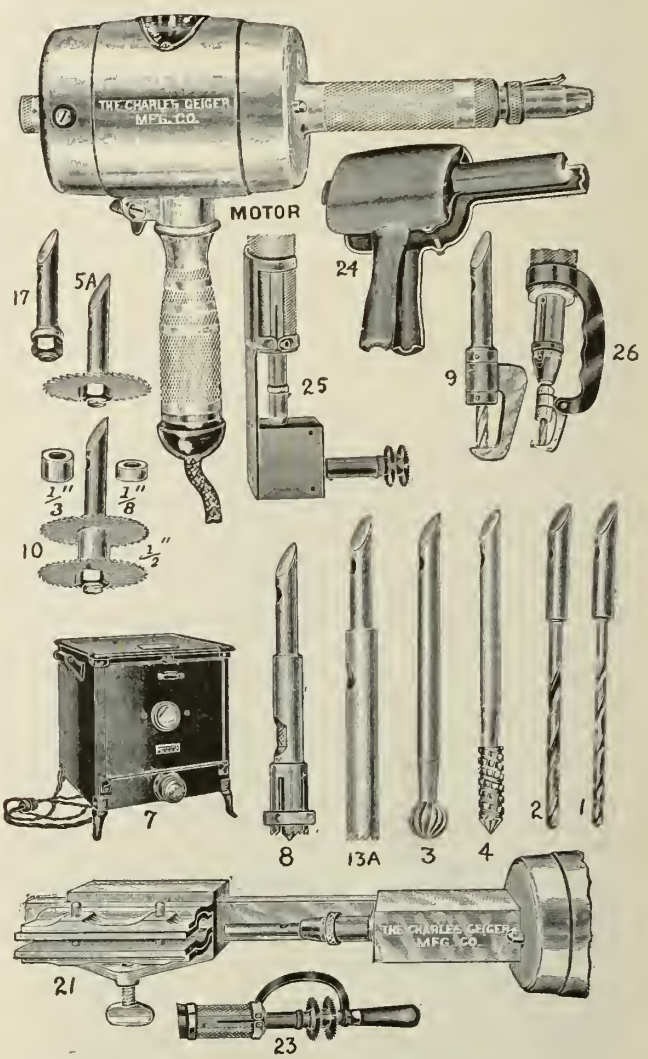
Since the use of bone plates of metal, ivory, animal or vegetable matter, as well as the human bone splint and dowel, has become popular in the treatment of fractures, electrically driven drills, cutters and saws are becoming more and more appreciated by surgeons, consequently, a variety of apparatus has been put on the market.

While none of these devices is absolutely perfect, some of them are better than others. Upon careful examination and trial of the Geiger surgical bone operating outfit, we found that it is one of the best of its kind. The motor is 1/15 h. p. and is of the universal type; consequently it can be used on either the 110-volt direct or alternating currents. The speed of the motor is 7,000 revolutions, which is reduced, however, by means of a double set of gears, to 400 revolutions per minute.

Thus one of the principal objections to the use of this apparatus, namely, the excessively high speed, is overcome. It is not necessary to have water dropping on the saws or burrs while in motion, to prevent burning of the bone, which is one of the most objectionable occurrences when electrically driven motor saws or burrs of very high speed are employed.

Various attachments are furnished with the outfit, as will be seen from the illustration, and no matter what technic the individual attending surgeons at the hospital may employ in their bone work, with such an engine in the armamentarium of the hospital the superintendent should be able to satisfy all concerned.

Figures 1 to 4 show twist drills and burrs, of which other shapes and sizes can be furnished upon demand. Fig. 8 shows a guarded trephine, so arranged that it can be set to prevent it from plunging into the cranial cavity. Fig. 9 illustrates the protected cutter, which is an adaptation of the well-known De Martel cutter, which has long been known as an ideal device for cutting flaps. Fig. 5A and Fig. 10 show the single and twin saws, and Fig. 13A the so-called dowel shaper, by means of which round bone pegs may be produced from strips of bone, taken either from the tibia of the patient or from the bones of animals, according to the technic employed by the individual operator. Fig. 21 illustrates an attachment for holding the flat strips of bone securely, while the dowel shaper cuts the round bone pegs or dowels.



Geiger surgical bone operating outfit and accessories.

The manufacturers state that the winding of the motor is of such a nature that the entire motor may be placed in an electric hot-air sterilizer (Fig. 7), which is furnished for the purpose, and heated to 130° C. or 275° F. Those who do not like hot air sterilization may purchase an aluminum shell (Fig. 24) shaped so that it will cover the motor entirely, after it has been rendered sterile by boiling. The housing of the motor is of aluminum and the weight of motor and cable is about 4 lbs.

In 1562, Bertrand Le Blas, a gentleman of Holland, who became insane, was given the following humane treatment to rid him of his affliction: "He was dragged on a hurdle, with his mouth gagged with an iron gag, to the market place, and there his right hand and foot were burned and twisted off between two red-hot irons, to drive out the evil that was in his mind." How different from the modern treatment of mental disturbances in the up-to-date psychopathic hospital!

QUERIES AND ANSWERS

Hospitals and the Harrison Law

To the Editor of THE MODERN HOSPITAL:

Must hospitals, in accordance with the Harrison law, have a prescription for every dose of the so-called "habit-forming" drugs? And will that make it impossible for nurses to administer morphine hypodermically in the wards and from tablets kept in the medicine cases on the floors? That looks like a pretty difficult method of procedure, if we must have a prescription every time.

PERPLEXED.

Somebody qualified to prescribe medicine should stand behind every dose of these "habit-forming" drugs; a nurse is not so qualified, hence there should be a prescription for every dose given, and it should be signed by the physician who ordered it. I think the law would not interfere with the emergency administration of a hypodermic dose without a prescription, but the prescription should be written on the order book or on the history sheet as soon as the doctor appears. There are too many patients who acquire these drug habits as the result of indiscriminate dosing in hospitals, and one of the purposes of the law is to stop that very thing. Every superintendent knows that an occasional nurse will be prone to give a "quieting dose" to save herself trouble. There are going to be prosecutions under this new law, and there should be; conscientiously conducted institutions will welcome the law, with all it stands for; others should be, and undoubtedly will be, punished for its violation.

Text-Books for the Training School

To the Editor of THE MODERN HOSPITAL:

Is there any list of approved text-books for use in training schools; we have a new three-year school and wish to start right.

THE WEST.

You had better apply for such a list to your state board of nursing registration. The secretary, usually located at the state capitol, will be glad to give you all necessary help in the selection of text-books and in the preparation of your curriculum; moreover, it will help you to work in pretty close touch with your state board. The board, you know, has to examine graduates for registration and these boards usually have pretty well defined notions about what they expect candidates to know. If there is no board in your state please give us your address and we will place you in possession of the necessary information to enable you to proceed.

How to Fight Roaches

To the Editor of THE MODERN HOSPITAL:

We are overrun with cockroaches; we have used the advertised "roach remedies" without effect. What are we to do?

MISS LARIMORE, New Jersey.

Your problem reminds me of a story: a fancy amateur hunter, caparisoned in all the "sporting goods" that he could carry, was leaving the duck marshes with never a bird; he came upon an old negro who carried an old bored-out musket of the vintage of 1861, and a string of ducks that fairly staggered him.

"Did you shoot them on the wing, Uncle?" asked the man in flashy regalia.

"Yaas suh," replied the old man; "on de wing, on de haid, on de tail, anywhares jist so I git 'em."

It is just so with your roaches; you will have to go after them, and keep after them. You can't get them all "on de wing"—that is in any one way. First find out where they live and breed, and pour a good lot of boiling water over the whole place—never mind if it is the floors or in the walls or down the plumbing; the water won't hurt anything but the roaches; then set some saucers around where they can get to them, containing a mixture, half and half, of concentrated lye and molasses; then sprinkle borax in the holes and cracks. Keep up this process for several days, then with plaster of paris paste, fill up every crack where they may make their exit. They will probably get out somewhere else after you have gone to all this trouble, but do not despair; stop them up again; hunting is good sport. The hunting of lions requires courage, one of the least of the virtues; the hunting of roaches requires persistence, one of the greatest. Moreover, there is a good deal of satisfaction in winning a fight—even against roaches.

Interns and Nurses

To the Editor of THE MODERN HOSPITAL:

Does THE MODERN HOSPITAL and the prominent hospital men on its editorial staff approve of interns and pupil nurses being permitted any sort of social relationship while they are serving the institution, and if so to what extent? There are many divergent opinions on this subject, and in our own hospital we are not all agreed.

A TRAINING SCHOOL DIRECTRESS.

The editors of THE MODERN HOSPITAL are not always agreed on many minor points touching their varied activities; I can only give one opinion, my own; my experience is that the young men and young women who make up these two professions are of a class that can be depended on to do their part in any scheme of institution discipline. If it is prescribed definitely in their rules of conduct that all their relationship while they are on duty shall relate solely to their duties, I believe the rule will be obeyed; those who cannot obey so obviously proper and reasonable a rule are not fit to serve in a confidential capacity in any institution. If we are to go further and say that they shall not meet or visit when off duty, I am under the impression that the demand is an unfair one. I can see no reason why young men and young women, who are constantly thrown together in an intimate relationship at the bedside of the sick, should not form a liking for each other and wish a better acquaintance. I think interns should be permitted to call on the pupil nurses in the Home, and to take them to proper places of entertainment if they wish. These are young people, we must not forget, and many of them, especially the girls, have very few opportunities to form new acquaintances and friends. The wise fisherman gives his quarry "plenty of line" within limits, else he is likely to lose him altogether.

Make love? Of course they are likely to do that very thing. Who would wish to prevent their doing so, if it is done within proper limits? Are they not of the love-making age, and isn't it just human nature that they should do so? If we older folk will not attempt to force prudery and Pharisaism and hypocrisy on these young folk, they will measure up to what we have a right to expect of them.

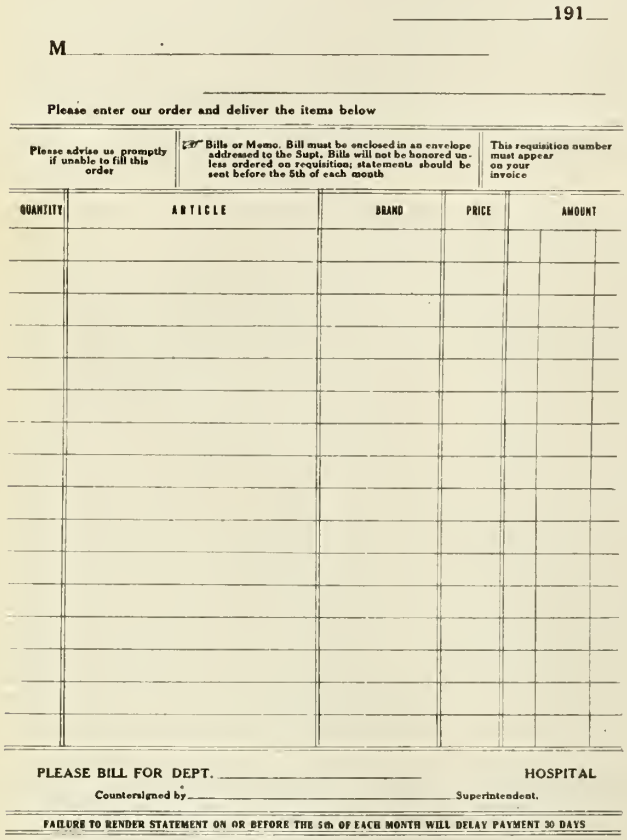
JOHN A. HORNSBY.

A Requisition Form for Purchasing

To the Editor of THE MODERN HOSPITAL:

Can you give us a good method by which to keep our purchases straight? Sometimes it isn't convenient for the regular buyer to go and pick out things, or she doesn't know just what is wanted, and often when a head of one of the departments has selected something and ordered it, it is wrong when it is delivered or it is different from what the buyer thought it was when she selected it; then there is trouble with the selling house, which often lays the blame on us. MARY T. W., Superintendent.

Your method is slipshod and unbusinesslike; you should have a requisition system and use it in every case. Whenever there is a purchase to be made, no matter for whom or for what department, a requisition should be made out and signed by you personally. If you buy the article over the telephone, put down the details at the time of purchase, mail the original to the dealer at once as his memorandum, and keep the carbon. If someone else is to go



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M_____

Please enter our order and deliver the items below

Please advise us promptly if unable to fill this order

☞ Bills or Memo. Bill must be enclosed in an envelope addressed to the Supt. Bills will not be honored unless ordered on requisition; statements should be sent before the 5th of each month

This requisition number must appear on your invoice

QUANTITY	ARTICLE	BRAND	PRICE	AMOUNT

PLEASE BILL FOR DEPT. _____ HOSPITAL

Countersigned by _____ Superintendent.

FAILURE TO RENDER STATEMENT ON OR BEFORE THE 5th OF EACH MONTH WILL DELAY PAYMENT 30 DAYS

A requisition form for purchasing.

shopping for the article, let her take the blank requisition, signed by you, fill it in when the purchase is made, and keep enough of a memorandum of the transaction to permit you to file the duplicate when she returns home. If the day's purchases of provisions are made over the telephone, the requisition may be made out at the time of purchase, and the original may be given to the driver when delivery is made, or it may be mailed at once. Every item purchased should be delivered to the hospital accompanied by an invoice containing, besides the items, the quantity and price, and the serial number of the requisition. This invoice should be checked with the goods by the storekeeper at time of delivery and filed with the bookkeeper, who keeps a separate file of these O. K.'d invoices to check with statements at the end of the month.

A thoroughly workable form of requisition is shown in the illustration; it is made in books of 100, with an equal number of duplicates in different color, to be used as carbon copies. This form, indeed any form, is good only if it is persistently used.

Ventilating the Operating Room

To the Editor of THE MODERN HOSPITAL:

We have a small hospital with only one operating room where all our surgical work must be done; we have one large window in this room that gives plenty of light; it is pivoted in the middle on each side and opens easily, but our surgeons will not permit it to be opened for fear of dust and soot falling into the field of operation. Do you think this fear is justified, and if not will you give us literature that will convince them? If it is justified, what are we to do about it? The room becomes stifling with foul air during the morning's work. A KANSAS HOSPITAL.

Your surgeons are entirely justified in this attitude; but it isn't necessarily "foul" air that makes the room stifling; it is more likely still air or dead air. You must keep the air in the room moving. A 12-inch fan, moving the air along any one of the side walls will help greatly, and this will necessitate no expenditure except for the fan and the little current used daily. But far the best way is to cut a hole through one of the outer walls, low down near the floor, and mount a small blower fan or even a common room fan in the opening. You can even set the fan on the floor, but be sure you house in the fan with the opening so the suction will be good. The air pulled out of the room will be replaced by new air from the corridor even though the door be kept closed; but it is better to have the transom open if you have one. The idea in having the fan at the floor is to pull out the carbonic acid gas, which, being heavier than atmospheric air falls down on expiration; while the warmer air of a room is above, the bad air is below.

Diet for Rheumatism and Gout

To the Editor of THE MODERN HOSPITAL:

Some time ago I noticed in a medical publication a list of articles which may be eaten, and others which should be avoided, by those suffering from gout, rheumatism, etc. At the time I clipped out this list, but seem to have mislaid it. I am not quite certain that it was in your journal that I saw it originally, but feeling that you, in all probability, have this information, I write to ask whether you would be kind enough to publish such a list, as it would be of inestimable value to many of your readers.

A ST. LOUIS SUBSCRIBER.

The paper on diet to which you refer is that of Miss Lulu Graves, on page 99, February number of THE MODERN HOSPITAL.

Isolation of the Communicable Diseases

To the Editor of THE MODERN HOSPITAL:

Will you tell us whether it is approved practice to care for those suffering from communicable diseases of childhood along with other sick children in the ward? One of our doctors says that these diseases are communicated only by contact with the infected child, and that if we are careful to see that the patient is kept from actual contact with the other children, there is no danger of transmitting the disease. MISS G. W. N., Denver.

I suspect that you misunderstand just what your doctor means; and that is the trouble with this so-called "technical isolation" of the communicable diseases. It is not necessary that the patient actually come in contact with another person to convey the infection; a nurse or intern or doctor may carry the infection on their hands or in their clothing, and the methods of transmission are too numerous

and too common to permit any chances to be taken in a general hospital. The only safe way is to keep these patients in actual, physical isolation by means of walls and doors; and no one who visits these quarters should be permitted in the rest of the house; even doctors are generally too careless to be trusted to carry out a technical isolation such as your doctor proposes. An immense lot of harm has been done by those who advocate this technical isolation; it can be accomplished only in very exceptional cases, such as in an isolation hospital, when the same medical men, the same resident doctors, the same nurses and the same common help are trained in the work year after year—and even then they have what we call "cross infections." In a general hospital with several doctors having the run of the place, with rotating interns and pupil nurses, and constantly changing employees, this sort of technic is out of the question. Better play safe and keep your communicable infections clear away to themselves.

Block or Pavilion Type Hospital

To the Editor of THE MODERN HOSPITAL:

We are planning a new two-hundred-bed hospital; there is a question whether it shall be of the block type, several stories high, or of the pavilion style, one or two stories. We should like to know what THE MODERN HOSPITAL thinks about this. THE FAR WEST.

The question of "block" versus "pavilion" type of hospital cannot possibly be settled in the brief space allotted for answers to queries in this column. We can only say that many things must be taken into consideration in determining the style of hospitals: the site, the proximity of the hospital to other buildings, the height of the ground, the locality, country or city. The purpose of the hospital must also be considered, whether, for instance, it is a teaching or university hospital or one solely to take care of the sick. I have in mind now a group of hospitals going up in connection with a great medical school. There are to be eight or ten pavilions for various classes of patients. The surgeons insist that there must be an amphitheater to seat a large number of students, located at a point contiguous to the operating suite, so that operations may be done before the class. But the doctors on the medical service, whose building is situated five or six hundred feet away from the surgical building, also insist that they must have an amphitheater in which cases can be demonstrated. The children's men want the same for their building, and so with the other departments, and all the department heads object to going into another building for demonstration of their cases. The bath department is another item of disagreement. The surgeons object to the removal of their cases over long distances for hydrotherapeutic purposes; the medical men think the hydrotherapeutic department should be connected with their building and yet they don't want to give up the room necessary for it; the neurologists claim that hydrotherapy is one of the sheet anchors of their treatment, and have objected to the hydrotherapy department being situated at a great distance from their department. One can well see that in a block type of building everybody could be well satisfied, because everything would be under one roof and all departments could use a common amphitheater for demonstration before classes, and a common hydrotherapeutic section. It would be merely a question of elevator service—to which no one objects. I have yet to find a single convincing argument in favor of the pavilion type of hospital for the United States. If you want air and sunshine, the higher up you go the more of these you will have. If you want economy of administration, you certainly have an advantage in elevator service as against traveling on the horizontal, which means a great amount of time spent walking to and fro. If you are thinking about the service of food, the laundry and garbage removal, elevator service is certainly preferable to the wheeling of trucks over long distances. We have taken our pavilion form of hospital from the Germans, where conditions are absolutely different from those that prevail in this country. We seem not to have given any thought to the details of our own enterprises, but to have followed blindly the lead of others whose activities have been predicated on an entirely different set of conditions. It might be that you have some special problem that is exercising the imagination and bringing up questions in the minds of your people; but it would be necessary to know what this special problem is before a more detailed and specific answer could be given.

Harrison Law and Graduate Nurses

To the Editor of THE MODERN HOSPITAL:

Will you please grant the kind favor of helping a graduate nurse to an understanding of the relation of the Harrison Anti-narcotic Law to the work of the nurse? I have questioned several doctors here, and there seems to be a variety of opinions in regard to this matter; and of course we nurses must soon be certain what our legal rights are as regards this.

Heretofore, while not compulsory, it was generally understood by trained nurses and doctors (in New England at least) that the nurse should carry, for each case, an assortment of hypodermic tablets (including morphine, plain and with atropine) to be used in emergencies, or in filling the "s. o. s." orders of the patient's attending physician.

Under this Anti-narcotic Law may nurses still legally *carry narcotics to their cases, for use under the direction of registered physicians?*

Most trained nurses still "have in possession" morphine, and sometimes also codeine, as previously indicated in this letter. Now, how does the law affect such "having in possession?"

If *not* legal for nurses to *carry* such narcotics to their cases, is it legal for them to *administer* such narcotics to their patients if said narcotics are furnished by the physician, and he orders that said narcotics be given to his patient by the nurse, "s. o. s.," during his absence or between his professional visits?

If legal for nurses to have such narcotics "in possession" for use under direction of registered physicians, how should nurses proceed in order to procure legally a further supply of narcotics for such use?

If nurses may legally administer narcotics by order of their patients' medical attendants, are said nurses obliged to keep any special record of it, or fill out "official blanks" of any kind?

The doctor may not, of course, be in actual attendance on his patients when a nurse fills some of his "s. o. s." orders. Therefore I infer that he must keep a record of narcotics dispensed under such conditions.

I feel sure that you are in position to give me perfectly accurate information in regard to this matter, and I will be very grateful to you for the favor.

MARY H. TUFTS, Graduate Nurse,
Farmington, Maine.

Replying to your letter of February 23, enclosing a communication from Miss Mary H. Tufts, a graduate nurse, requesting information regarding the Harrison Narcotic Law, you are advised that under the provisions of this law a nurse cannot be registered and pay the special tax, and she can lawfully have such drugs in her possession only under the direction of a properly registered physician, and such physician must furnish these drugs to the nurse when attending the patient, and any of the drugs unused should be returned to the physician when the nurse's services are dispensed with.

Such drugs can only be administered to a patient under the direction of a registered physician, and so long as a nurse is under the direction of such physician she will be allowed to administer the drug, whether the physician is present or absent.

A registered physician, leaving a supply of any of these drugs with a nurse to be administered in his absence, should keep a record of the quantity left.

DAVID A. GATES,
Acting Commissioner of Internal Revenue.

THE HARRISON LAW IN HOSPITALS

A Simple Form Endorsed by Commissioner of Internal Revenue for Recording Doses of "Habit-Forming Drugs"

The going into effect of the Harrison "habit-forming drugs" law on March 1, and the tremendous consequences in almost every line of life, evidently came as suddenly upon the office of the commissioner of internal revenue as it came upon the country as a whole. The commissioner was given a wide margin of discretion as to the carrying out of the law and had the grave responsibility of having to create regulations by which the law could be economically and properly administered, at the same time making the least amount of disturbance in the lives of the people as a whole.

Of necessity, the working of this law would be a more technical operation in the hospitals than elsewhere and one about which those untrained in actual hospital administration could know very little.

Fortunately, the commissioner of internal revenue appreciated the difficulties, under the circumstances, and has gone very carefully about his regulations as to the carrying out of this law in hospitals.

On March 2 the following letter came to THE MODERN HOSPITAL:

Replying to your letter of February 23, you are advised that mimeograph letter No. 1163, regarding the application of the Harrison Narcotic Law to hospitals, has been so far modified as to allow such institutions to adopt any method that would best suit the convenience of such hospital in keeping a record of the drugs or preparations dispensed or distributed.

This office suggests that you submit a plan for the keeping of such records to this office, and if such plan meets with approval you will be promptly advised. This office desires a record that will be readily accessible to an examining official, showing the disposition of these drugs after they are received in a hospital.

Respectfully,
DAVID A. GATES,
Acting Commissioner.

To this letter the following reply was made, accompanied by the form below:

I want to thank you for your request for a suggestion as to the operation of the law in hospitals. I am accepting your invitation to make a suggestion, which I hope will be of service to your department, and I am quite sure that my suggestion would satisfy the exigencies of hospital practice. My idea is not to make each nurse fill out a long form to be filed with the druggist every day for the purpose of having the information available in the main drug store of the institution; my idea is that a form should be kept at the desk of each service head nurse on the various floors and that this form should be somewhat along the lines I am indicating in the enclosed slip. The working of this form would be about as follows: no dose of any of the narcotic drugs would be given to the pupil nurses, but would be supplied for each of the heads by the head nurse on the floor, or by the "medicine nurse," where pupil nurses are acting in that capacity, and that in each case the head floor nurse would be required to make the entries suggested on the form enclosed—not at some time in the future, but immediately when she is asked to turn over a tablet or dose of any of these drugs.

These forms could be printed on the lines such as I have indicated and the sheet could be retained by the various head floor nurses during the month, so that at any time when a visit is made to the institution by representatives of your department, the druggist could send, in a moment, for these sheets from the various floors.

An exact account of the drugs used could be kept in this way by having the druggist distribute certain exact quantities to the floors and the head nurses would have in their possession at all times precisely the difference between the amount distributed to them and the amount that their sheets would show as having been used.

By employing this method a representative of your office could in five minutes know exactly the condition in the hospital and the pharmacist would be able to account for every dose of these drugs that had been administered at any time when the information was required by your representatives.

.....HOSPITAL
HABIT-FORMING DRUG SHEET

NOTE—For every dose of Opium or Coca leaves in any form—opium, morphine, laudanum, heroin, cocaine, etc.—a full line of this sheet must be filled out. Failure to do so is punishable under the law by fine or imprisonment or both.

DATE		NAME	LOCATION	DOCTOR	DRUG	AM'T	ADMINISTERED BY (Doctor or Nurse)
Day	Hour						

It seems that this form has met with the approval of the commissioner, as indicated by the following letter received on March 16:

John A. Hornsby, Esq.,
THE MODERN HOSPITAL, Chicago, Illinois.

Sir: Replying to your letter of the 6th instant, you are advised that it is not the purpose of this office to promulgate such regulations as would be impossible or impracticable to enforce as regards the keeping of records of narcotic drugs administered in hospitals, and your suggestion appears to this office to be an excellent one, and would permit an inspecting officer to secure the data necessary in making an investigation without any trouble.

There has been suggested to this office that a special bedside sheet be attached to the chart or history of each patient, and all drugs coming within the scope of the Harrison Narcotic Law are entered on this sheet by either the attending physician, or nurse under the direction of the physician. This special sheet is filed with the pharmacist or other person in charge of the drug supply of the hospital, at the time the patient is discharged or when the sheet becomes filled with entries, or at certain stated intervals. The pharmacist keeps these records and checks them up against the amount of drug he previously furnished a ward or operating room. Where hospitals have desired to adopt this method it has been approved by this office.

The plan suggested by you seems to be somewhat along the lines indicated above and fully meets the approval of this office.

You will readily understand the difficulties encountered in suggesting to hospitals a method of keeping such records, as it is not desired to unnecessarily interfere with long-established methods in use in such institutions, and a suggestion such as indicated in your letter is appreciated. If this subject is discussed in the April number of THE MODERN HOSPITAL, this office would appreciate the receipt of a copy.

Respectfully,
G. E. FLETCHER, Deputy Commissioner.

The form indicated is reproduced because it seems to be a simple method for carrying out the purposes of the law.

THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

Refrigerators

To understand the vital points to be considered in refrigerator construction we must first determine the points vital to such construction. It will be generally conceded that these are three in number:

1. Insulation.
2. Air circulation.
3. Durability of insulating material.

Good insulation, in proportion to its degree of perfection, means lower ice consumption. On the air circulation depends the length of time food in storage can be conserved; for the surrounding atmosphere must be dry, and this condition is obtained only with good air circulation. The third point mentioned above is that the insulation shall remain nearly as perfect, after a lapse of time, as when the refrigerator was new.

The easiest way to grasp the first point, insulation, is to study the relative insulating values of the various materials which can be used in refrigerators, which are set forth in the following table compiled by Professor Charles L. Norton, of the Massachusetts Institute of Technology:

The relative values are for the materials in dry condition and one inch in thickness:

Cork sheets, pure	1,000
Magnesia carbonate	901
Hair felt	877
Cork sheets, asphalt cemented	870
Air cells, paper	794
Cork sheets, hydraulic cemented	769
Rock wool	763
Asbestos fiber	763
Spruce	645
Brick wall, 4 inches thick	426

The word "dry" at the head of the table is the crux of the situation. When built, the walls of any refrigerator are dry, but time and variations of temperature open up channels for the entrance of moist air into the insulating material; and just in proportion as it absorbs moisture it loses its insulating properties and the cost of cooling the boxes goes up.

The principal trouble about refrigeration is not the source of supply, but the conservation of that supply. In other words, there is no difficulty in procuring cold from blocks of ice, and there is no difficulty in getting a satisfactory refrigeration plant to produce cold at a moderate cost, and the risk attending the selection of any one of the leading makes of plant rather than another is not great.

But the moment the cold is delivered to the refrigerator, either from ice or from a brine system, the risk begins of throwing money away daily by not keeping a grip upon the supply of cold. A little extra money will secure the means of preventing its constant escape during twenty-four hours per day, for 365 days per year.

The important point in refrigeration is the conservation of the supply of cold air in the compartments it is to be used in and the circulation of that air in as dry a condition as possible.

Were it possible to obtain results in practice, air permanently confined in dead air spaces would give ideal insulation, but experience has taught us that no matter how great the care exercised in building refrigerators of this type, the air spaces become leaky, owing to shrinkage of the lumber, or, in large rooms, the settling of the building, and consequently they lose their insulating efficiency.

The ideal insulating medium being dead air in tightly sealed compartments, brings us to the search for that substance which contains the greatest quantity of air cells, hermetically sealed, in its composition. Such a substance is naturally as free as possible from capillary attraction, with its attendant capacity for absorbing moisture. It should at the same time be practically fireproof.

At the head of the list as air-insulating material is cork. Placed under a microscope of high power, cork presents the appearance of a honeycomb. It is composed of tiny air cells, which are all sealed. This prevents the passage of any moisture through its body; therefore cork has for generations been employed to stop up bottles. It is said that cork, which is an extra layer of outer bark, is placed around the trees by nature in order to insulate them from the burning sun and the radiation from the burning sand and rocks of northern Africa and southern Spain, where these trees grow. Cork burns slowly, and when covered with cement becomes practically fireproof; and as a non-conductor it stands easily first.

A new refrigerator, when everything is dry and no cracks or warpings or settlings have taken place, gives good results, within the limits of the efficiency of the insulating materials.

Pitch, on the walls of a refrigerator, has small value save that of stopping the entrance of moisture into the insulating material. It cannot insulate, having no air cells, as is amply proven by its weight of 87 pounds per cubic foot as against 10 to 15 pounds for packed mineral wool and 6 to 8 pounds for granulated cork.

Air spaces formed of built-up chambers sealed with paper would be all right if, like the tiny cells in cork, these spaces were hermetically sealed; but they cannot be, and are consequently only efficient in proportion to the absence of passage of air through them. Nail holes and shrinkage of lumber are fatal to efficiency.

Mineral wool and rock wool, in their various forms; shavings, hair felt and pumice stone, owing to their fibrous nature or porous structure, have great power of absorption of water; consequently when any moisture can reach them they at once absorb it and the water thus absorbed displaces the trapped air in their composition and they become consequently conductors of heat.

The following figures will give an idea of insulating values in actual practice. These figures can be taken as sufficiently exact for practical purposes:

Take as a basis a refrigerator 5 feet long, 3 feet deep, and 5 feet high (which equals a capacity of 75 cubic feet), with an inside area or radiating surface of 110 square feet. Assume that the outside temperature is 82 degrees and the inside temperature 32 degrees Fahrenheit; that the walls of the box are 4 inches in thickness and that the melted water is being drained away. One ton of ice will last as follows:

4-inch sheet cork, insulated box	33 days
4-inch mineral wool, insulated box	11 days
4-inch air space, insulated box	8 days

In other words, with the same thickness of wall it takes

three times as much cold to maintain a given temperature in a box insulated with mineral wool as in one insulated with sheet cork; and four times as much as in one insulated with an air space.

In practice these proportions are cut down by the fact that hydraulic cemented cork is mostly used and that thicker walls of mineral wool and air are used than is usual with cork. Still under the most favorable allowances the percentage of saving in favor of a cork insulated installation, especially if the cooling is overhead, over any other form of installation, will very soon save the difference in the original cost. Therefore, unless first cost is everything and everyday maintenance of slight consideration, cement boxes, cork insulated with overhead cooling, must give the cheapest cost for running expense, provided they are properly erected and doors and fittings are perfect in workmanship.

In point of durability cork construction will outlast any other many times over and at the same time maintain its efficiency. Other materials must absorb water; cork cannot absorb water. Water being the enemy of insulation, the deterioration must be more rapid in the material which can absorb moisture.

The first cost seems high, but it is paid only once; and ten years will show that this cost is as nothing compared with the actual cost for the ice wasted in a refrigerator whose insulating material has a low value at the start and which gradually loses what value it has by the absorption of moisture.

The principle of air circulation is simply that hot air goes up and cold air falls down, and as long as the one chases the other around the ice boxes, circulation, which means dry air, must result. One thing must be remembered, however: air cannot circulate unless given sufficient space to pass through. That is why brine coils placed on the sides of boxes are not so effective as when placed on the top. They would be about as effective on the sides if space were left behind them and a baffle put in front of them, but this takes up so much space that it is not practical. Putting the brine pipes on the top means higher boxes, consequently more square feet of insulation and drip pans below the pipes, all causing extra expense to instal; but it is cheap in the long run when every day's refrigeration bill counts.

Pine wood, when good air circulation is present, makes probably the best lining possible, unless the boxes are entirely built out of concrete inside and out, or are concrete lined with marbleoid. Wood, cement and marbleoid do not sweat. Consequently where they are used no moisture is generated on the side next the insulating material, as must invariably be the case with tile, glass or metal.

All of the foregoing applies with especial force to the larger sized refrigerators used for storage. The necessity for perfect construction and insulation in these is greater than in small refrigerators because they are a permanent heavy investment and the amount of ice or brine refrigeration necessary becomes an important item of expense.

In small refrigerators, while the same principles apply absolutely, there are other factors which enter into the question. The ease with which tile or glass lined boxes may be cleaned counterbalances the deterioration of the insulating material to a great extent. Then, too, a small refrigerator is not looked upon as a permanent investment, and while the percentage of ice lost may be the same as in the large boxes, the total sum, in the opinion of most people, is insignificant. The first cost of cork insulation cuts an important figure in many cases. So that while the principle is the same, the purchase of small refrigerators is a matter which will always be guided by the means at command and the preferences of the individual buyer, although the wiser ones will always look out for the quality of insulating material first, if they wish to save on ice. The small refrigerator with sufficiently thick walls may therefore be of various construction, and have various linings, and give perfect satisfaction for all practical purposes; and sufficiently good results can be obtained from any of the first-class makes on the market without undue expenditure of money.

New Surgical Ward at Battle Creek Sanitarium

The new four-story surgical ward recently completed at the Battle Creek Sanitarium, Battle Creek, Mich., is an interesting example of modern hospital construction.

The walls and ceilings of the entire operating suite, consisting of four rooms, are of glass, and the floors are mosaic. These rooms are air-tight, and all the air that is let into them is washed and warmed in winter, and washed and cooled in summer. The temperature is kept the same the year around. The rooms are cleaned by throwing hot water on the walls and ceilings with a high-pressure hose. The windows of these rooms have been made of a solid piece of glass of the finest quality of pure crystal, the object being to eliminate even the faintest shadow of a window sash or catch.

The corners of the operating room, as well as of the halls and bedrooms throughout the building, are rounded.

All heating radiators are equipped with regulators, which keep the room at an even temperature. The steam enters the top of the radiator and comes out at the bottom in the form of water.

On each floor there are two double-walled rooms, in which groaning or delirious patients may be confined so that others will not be disturbed.

A hydraulic elevator, which operates noiselessly, will be used to move patients from one floor to another.

The cost of the equipment alone, it is said, will amount to about $50,000.

Marriage Law For Defectives

A recommendation recently made to the Michigan legislature by the state eugenics commission appointed in 1913, urged that a law be enacted making it obligatory that the name of each individual who may be cared for in a public or private institution in Michigan for the insane, delinquent, dependent, mentally defective or epileptic, be filed in the office of the state board of health by the officer in charge, such names to be held in privacy, and that before the clerk of any county may issue a license for marriage he shall submit the name of the applicant to the secretary of the state board of health. If any information is in the official possession of the state board of health which shows that such individual has been adjudged insane or shown to be feeble-minded, epileptic or afflicted either with active or latent sexual disease the license shall be denied. It was also recommended that each of the state institutions for the care of the insane, epileptic and feeble-minded be authorized to employ a field worker whose duty it would be to exercise a systematic supervision over discharged patients. As an instance of the lack of laws for the enforced segregation of feeble-minded persons, the commission cited a case in which county officials had permitted the marriage of a feeble-minded woman, who had only the mentality of a child of seven and one-half years, to a man of questionable mentality, in order that the county might escape further cost of supporting the woman.

AMERICAN HOSPITAL ASSOCIATION

The San Francisco Convention

Secretary Boyce of the American Hospital Association has sent out the following letter to the hospital people of the United States and Canada:

Every superintendent should attend the meeting of The American Hospital Association to be held at Hotel Inside Inn, San Francisco, June 22, 23, 24 and 25, 1915.

From the standpoint of health and attractions this great city is unsurpassed. The great Panama-Pacific Exposition will be at its height. The American Medical Association and the American Nurses' Association meet at the same time. Perhaps never again will there be such a large number of men and women gathered together for the purpose of discussing the best methods of rendering decay less rapid, life more vigorous and death more remote. There will be an opportunity for hospital workers to talk over their problems with experienced hospital administrators. The program will be most instructive.

Most boards of trustees now know that it pays to send a representative to these conventions. No superintendent can keep pace with the giant strides of progress in hospital architecture, administration, etc., if he confines himself at home, and it is unfair to expect any superintendent on his meagre salary to finance his attendance at conventions.

On account of the severe nervous strain of institution work it is necessary that the head of a hospital should take a holiday occasionally. In fact, a superintendent who works eleven months in the year is worth more than the one who works twelve. This is the time to arrange with boards of trustees for attendance at the convention.

The Association's special train will leave Chicago, Ill., June 13th. For particulars and reservations write Mr. Asa Bacon, Treasurer and Superintendent, Presbyterian Hospital, Chicago, Ill.

Let us unite to make the Non-commercial Exhibit the best yet. A pamphlet containing full particulars has been mailed to each member. It is to be hoped that every superintendent has contributed to this exhibit before now. If you have not already sent something please forward some article to Miss Lydia H. Keller, R. N., Northfield, Minn., today.

Doubtless the commercial exhibits will far surpass anything yet. Each of the associations will have an exhibit.

The cooperation of the members is earnestly solicited in assisting to increase the membership of the Association. An ounce of personal interview is worth a ton of circular letters. A word or a personal letter from one member of the Association to a superintendent friend who is not a member will do as much good as a hundred circular letters from an Association official to a hospital superintendent whom he does not know. The president and officers of the Association urgently request that each member of the organization try to induce at least one person to join before the meeting in June.

The secretary will be pleased to forward literature and application blanks.

The fee is $5.00 for active members; $2.00 for associate members. This entitles the applicant to a free copy of the transactions, which retails at $2.00.

New Hospital for Nova Scotia

In August last there was opened in the town of Glace Bay, Nova Scotia, the Glace Bay General Hospital. This is a fine institution with a capacity of about eighty beds. The building is of brick, three stories, with a full-size basement. The two wings radiate in stellar form from the main building. The institution is equipped with an elevator, operated by hydraulic power, a refrigerator, and an ice making plant. The hospital is altogether well equipped, and is in charge of Miss Edith A. MacCarthy. Glace Bay is a very active mining town of about 17,000 population.

There is another hospital, St. Joseph's, of about one hundred beds capacity, situated in the same town, which is surrounded by a number of other smaller mining places, which contribute to the hospital service.

War on Jersey Mosquitoes

The Bergen County (N. J.) Board of Freeholders has appropriated $14,000 to aid in mosquito extermination. Representatives from the New Jersey State Commission appealed to the board, asserting that the neighboring counties of Hudson, Essex and Union were complaining because of Bergen's seeming indifference. Last year the board appropriated only $800.

Dr. Simon J. Young, Health Commissioner for Porter County, Indiana, has taken an advanced step in public health by equipping the county laboratory for the work of making free Wassermann tests to all citizens of the county. New York is the only other state that has undertaken this work as a part of the health propaganda.

The Public School Board of Petersburg, Va., has decided to have a physical examination made of all children in the public school by physicians selected by the parents, without cost to them, the doctors having offered to perform the work without charge.

Milwaukee, Wis., is planning free dispensaries and clinics in the public schools, not only for the pupils but for the neighborhood generally. This is the most advanced stand taken yet in an American municipality in the socialization of medicine.

The New York City Department of Health has ordered printed signs to be posted in all stores where groceries, meats, fruits and other vegetables are displayed for sale, directing attention to the ordinance forbidding the bringing of dogs into such places.

The Red Cross badge of honor, second-class, has been conferred on Dr. McDonald, chief surgeon of the American Red Cross Hospital Unit, Budapest, and on Surgeons Jewett and Miller of the staff of the hospital.

Drs. Ethan F. Butler and Ernest P. Magruder, both of Washington, of the Servian Red Cross Unit, have converted a tobacco factory at Gevgalia into a hospital with a capacity of 1,400 beds.

Dr. Charles Hedinger is the oldest doctor practicing medicine in the United States. Dr. Hedinger graduated from Goettingen University in 1842 and has been practicing for seventy-two years.

TRAINING SCHOOL PUPILS FROM CANADA

Ruling of the Commissioner of Immigration Relaxes Law Against So-called "Alien Labor"

It has been a mooted question ever since the new immigration law went into effect as to whether or not advertisements could be placed in Canadian papers for pupils for the training schools in the United States. For a time the practice was forbidden and a ruling was made that such advertisements were explicitly in violation of the law against making contracts for so-called "alien labor."

Recently the City Hospital of Cleveland, through its superintendent, Mr. Howell Wright, placed some advertisements in Canadian papers, inviting pupil nurses into the training school of that institution. The local immigration officers threatened prosecution and the matter was finally referred by Mayor Baker, in a masterly legal argument, to the commissioner himself. The whole matter was threshed out before the law department of the Immigration Bureau and as a result the following letter was received by Mayor Baker, permitting such advertisements and permitting training schools in the United States to seek and accept Canadian young women:

March 6, 1915.

Hon. Newton D. Baker,
Mayor City of Cleveland, Ohio.

Dear Sir: Receipt is acknowledged of your letter of the 26 ultimo, addressed to the Secretary of Labor, with reference to the matter of securing pupils from Canada for the training school for nurses which is conducted in conjunction with your city hospital.

Under the present practice, it is permissible for the hospital authorities to advertise in Canadian newspapers and to accept aliens from Canada as students in the training school. Very truly yours,

For the Commissioner-General:
(Signed) A. WARNER PARKER,
Law Officer.

This letter does not cover another difficult point which concerns advertisements for and acceptance of graduated nurses in Canada for salaried positions in the hospitals of the United States; and until a further ruling is made such practice is forbidden under the immigration laws.

BETTER SURGERY FOR THE WAR

Dr. Alexis Carrel to Have His Own Nurses and Trained Technists in France—Rockefeller Institute Provides Means

Miss Catherine Lilly, head nurse of the department of surgery in the Rockefeller Institute for Medical Research, has gone with a detachment of Red Cross nurses to Compiegne, France, near the northern battle front, to assist Dr. Alexis Carrel in the hospital provided for him by the French government.

For the use of the patients in charge of Dr. Carrel and his assistants, the government has requisitioned a hotel, which has been converted into a hospital with accommodations for about one hundred persons. The government will provide administrative officers as well as competent surgeons suggested by Dr. Carrel, to carry on the regular work, thus leaving Dr. Carrel free to perform his characteristic operations, especially in the line of transplanting tissues, blood vessels and nerves, and blood transfusion, and to conduct the laboratory studies which are about to be undertaken. In order that the work under Dr. Carrel may not only be of the greatest effectiveness at the moment, but may be made permanently available to the world of science, the Rockefeller Institute is equipping Dr. Carrel's hospital with complete apparatus for research in the bacteriological, pathological, chemical and surgical conditions which may arise.

Dr. Carrel, who was spending his vacation in France at the outbreak of the war, immediately offered his services to the French government, which were accepted. He was detailed to the military hospital at Lyons, at which there were referred to him especially the wounded with injured blood vessels and nerves, in view of the research work which he had done in these classes of injuries. From the application of the method which he discovered for suturing and transplanting blood vessels and tissue, it was possible to save limbs which otherwise would have inevitably been lost. Dr. Carrel has now been given special facilities as near as possible to the line of battle, because of the unusual conditions which have developed in this conflict incident to trench warfare.

In carrying out the enormous work incidental to military operations, one government alone could hardly undertake at this critical period to organize hospitals and laboratories for conducting research work. They must be quite content to deal with conditions as they arise. It is just there that Dr. Carrel's peculiar qualifications come in, and in that respect that the contribution of the Rockefeller Institute is largely made.

Hence it is that he is to have a staff consisting of bacteriologists, chemists and technicians, forming a laboratory unit in addition to the regular surgical unit of the hospital. He is fortunate in being joined by Dr. H. D. Dakin, who has been for many years in this country and has a distinguished reputation as a chemist. He has been assigned to take charge of the chemical part of the humane work of investigation.

The Rockefeller Foundation has just voted an appropriation of $20,000, to be used under the direction of the Rockefeller Institute, in furthering medical research work under war conditions.

The Institute has had many appeals made to it for serum for use in the treatment of meningitis and dysintery, and these serums have been distributed freely.

Mayos Would Found Million-Dollar Clinic

Drs. William J. Mayo and Charles H. Mayo, famous surgeons of Rochester, Minn., have offered to establish a $1,000,000 foundation for medical research, to be under the control of the University of Minnesota, subject to certain restrictions.

The plan provides that the interest of the fund be used in research work at Rochester, which shall be open to graduates of the medical department of the university.

For years the Mayo brothers have conducted a surgeons' clinic at Rochester, and they now propose to put the work on an official basis, making provision for graduate instruction at Rochester which will lead to an additional degree at the university.

The faculty of the university medical college has already voted its approval of the Mayo proposition and it is thought to be certain that the proposal will be accepted.

Dr. Nordhoff-Jung, a woman physician connected with the American Red Cross Hospital in Munich, reports that an attempt is being made to establish an American Red Cross Hospital near Metz. This location is not far from the battle line and would give the hospital an opportunity to care for men whose condition does not warrant removal to a more distant German hospital. The report states that all the available hospitals in that region are filled with wounded and that private houses are being pressed into service.

THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. IV *May, 1915* No. 5

THE SOUTHERN PACIFIC COMPANY'S RAILROAD HOSPITAL

A Magnificent Group for 250 Patients, Embodying the Best Devices and Most Complete Equipment—All Tile Floors—Besides Two Elevators, a Broad Incline Leads from Ground Floor to Roof—The Company a Pioneer in Welfare Ideals

By F. K. AINSWORTH, M. D., Chief Surgeon

SOME of us not yet old can recall a time when it was considered humiliating to be taken to a hospital. The very word was suggestive of the poor-house, and it used to mean about that. Yet what a revolution has taken place in a very short space of time in the viewpoint of the public toward hospitals!

If a fine watch gets out of order the owner does not tinker with it himself, nor does he open it up when the air is full of flying dust. When something serious is the matter with a battleship the officers do not beach her on the nearest coast and go nosing round her hull. Modern mechanism costs money. Its repair is not entrusted to any puttering novice. It is taken where every facility is provided to do a good job and to do it thoroughly. Every possible chance of mishap is guarded against.

Fig. 1. Southern Pacific Company's Hospital. Inclined passage way.

We should not then go haphazardly about repairing the most intricate mechanism of all—the human body. The old Central-Southern Pacific magnates realized this long in advance of their time. They appreciated the fact that the human machinery on which they must rely in the upbuilding of their enormous undertaking should be conserved. They saw that when this machinery needed renewing and repairing there must be a suitable place to do it, where it could be well done. To provide this, in 1867 they rented a residence in Sacramento, California, for a temporary hospital, and built there in 1869 the first hospital in the world erected for the exclusive care of railroad employees. It was abandoned in 1901 and a larger and better hospital erected in San Francisco. This was destroyed in the fire of 1906. In 1909 there was built the present General Hospital, which occupies an entire block at the panhandle entrance to Golden Gate Park.

The General Hospital is a series of buildings of reinforced concrete, with ornamental brick walls. The main building, or hospital proper, a central building with two wings, has four stories. Back of this are lesser structures, similar in design; one of these is the power plant, one the employees' building, and one of them is Huntington Social Hall.

The Grecian columns at the entrance to the main building suggest a state capitol, but instead of legislative chambers we find a hospital that is a revelation in its preparation for saving and re-

pairing life. There are in all twelve twelve-bed wards, four eight-bed wards, and four six-bed wards; the remainder are single and double rooms. The total capacity is 250 patients, without crowding.

It will interest the reader to know that there are no wooden floors throughout the building, the floor space being entirely covered by tiling, as are all corridor walls to the height of four feet. There is no staircase in the main building, but an incline leading from floor to floor, so that patients can move freely through the building. The walls and ceilings are enameled and the woodwork throughout the building is of primavera. It is interesting also to observe that there are no outer casings on the doors or windows; this eliminates not only corners and crevices, but the wood effect which detracts so much from the appearance of so many first-class buildings.

Fig. 2. Southern Pacific Company's Hospital. Eight-bed ward.

In the basement is erected the ventilating plant, by which fresh air is forced into every ward and room where patients are cared for. This air is drawn into the fresh-air tower through a shower bath, and on the roof of each wing are exhaust fans which take out the used and vitiated air from the building.

On the first floor are located, among other things, the x-ray, hydrotherapy, and mechanotherapy or Zander sections, the latter being the only one on the coast. There are also located on this floor the dispensary, kitchens and dining rooms.

The second floor, center, is devoted to administrative offices, dressing rooms, library, staff rooms and the eye and ear department. On this floor, in the east and west wings, are wards.

On the third floor, both center building and wings, are wards and rooms, and on the fourth floor are wards and the surgical department.

Fig. 3. Southern Pacific Company's Hospital. One of the many "cart and chart" rooms.

Fig. 4. Southern Pacific Company's Hospital. One of the dressing rooms.

Fig. 5. Southern Pacific Company's Hospital. One of the laboratories.

On the spacious glass-screened roof is accommodation for open-air treatment for twenty-five patients; they sleep, eat and live in the open air. On the roof also is located the Harriman Research Laboratory, which is equipped by the company, but is maintained out of an endowment given by Mrs. Harriman.

The power house, with its electric plant, is one of the most complete of its kind and perhaps is as attractive as any similar plant, either in a hospital or elsewhere.

The Huntington Social Hall, provided for the relaxation of convalescents, was built by Mr. and Mrs. H. E. Huntington as a memorial to Mr. C. P. Huntington, who for years was the president of the Southern Pacific Company.

The Southern Pacific Company, being the first railroad company to start a hospital for the care of its employees, is still far in the lead in the magnitude and perfection of its hospital service. This is nowhere better exemplified than in its General Hospital. It employs tens of thousands of employees, and it did not skimp in expense when building a hospital for their care. It was a case of room and location and everything else having to be the best. A round million of money went into this human repair shop. It has been pronounced by experts to be unequaled by any railroad hospital in the world; one distinguished surgeon has gone so far as to say that it was the best big hospital on earth. An inspection of this plant is most interesting and instructive.

THE MEDICAL ORGANIZATION OF STATE HOSPITALS FOR THE INSANE[1]

How New York Has Systematized the Medical Care and Treatment of Her Dependent Insane

By WILLIAM MABON, M. D., Superintendent and Medical Director, Manhattan State Hospital, Ward's Island, N. Y.

THE growth in size of institutions for the insane during recent years has been so great as to make it necessary that they should have organizations that will permit the closest scrutiny of their work, in order that the highest state of efficiency may be maintained. As the Manhattan State Hospital is one of the largest in this country, it has had to work out many of the problems of management and organization, and therefore it seems proper to cite this as typical of the organization of state hospitals generally. Its medical administration is under the direction of a medical superintendent, who is assisted by physicians graded as first assistant physician, clinical director, pathologist, senior assistant physicians, assistant physicians, women physicians and interns. In order that the patients may have the benefit of the experience of specialists, there is a consulting staff composed of men prominent in their respective specialties, who are called upon frequently by the superintendent or his assistants.

THE MEDICAL SUPERINTENDENT

Everything in connection with a state hospital for the insane has either directly or indirectly a medical bearing, and hence the executive head should be a physician who is well trained both in executive work and in psychiatry. His authority must be supreme. He should have the power to make all appointments and removals, not only of medical officers, but also of other officers and employees. The law charges him with the management of the entire hospital, both in its medical and business departments. His duties are to carry into effect the provisions of the statute governing the insane. He must see that the certificates of commitment comply with the legal requirements, and if they do not he must reject those patients whose commitments are irregular. He must direct the medical work in all its bearings and keep in intimate touch with his assistants, and through them direct such medical, moral and physical treatment of the patients as will best promote their welfare, and, if possible, their restoration to health. He must regulate the daily life of the household. Each day he should ascertain the condition of the patients; and he should so arrange the medical records of the hospital that they will show full statistical particulars and give a careful and thorough account of the physical and mental state of each patient at the times of admission and discharge, and his condition and changes while in the hospital. Therefore, staff meetings should be held at which the condition of patients should be considered and matters of medical service given attention. He should see that particular attention is given to matters connected with the causation, treatment and morbid anatomy of insanity. To this end all approved means, methods, appliances and apparatus of research and study, as well as of treatment and

[1]This is the second of a series of papers on the Conduct of State Hospitals. The article next month will relate to the organization, and especially to the business organization, of a large hospital and will be written by Dr. Arthur W. Hurd, Superintendent Buffalo State Hospital.

management, should be brought into requisition as far as the resources of the institution will permit. All correspondence concerning patients should be conducted in his name.

THE FIRST ASSISTANT PHYSICIAN

Usually the first assistant physician is the assistant superintendent, and attends to many of the details of the executive work, such as visiting daily the wards of the hospital, ascertaining the condition of the sick, the violent and the bedridden, taking cognizance of injuries, accidents and unusual occurrences, and investigating and reporting upon them. He also sees the patients at meals, inspects the food and its service, and hears complaints, if any, regarding it. The relatives and friends of patients interview him in regard to such matters as the ward physicians have not covered. He is responsible for the sanitary conditions of the wards and buildings, and must call attention to any defects in regard thereto. He should notice the attitude and relationship of physicians to patients and employees. He inspects and initials night reports, interviews applicants for positions, arranges for temporary substitution in the medical service, and attends to routine matters of discipline. He arranges for the transfer of patients from ward to ward, and directs the subordinate medical officers in minor matters.

He should see that the duties assigned to other medical officers are properly performed; that all inspections are regularly made; that rounds are made at proper hours by medical assistants; that histories are properly filed, and that the regular sequence of day and night duty is provided for. In institutions where there is no clinical director he should preside at the staff meetings. He should maintain an oversight over the training school for nurses and attendants, and in brief represent the superintendent in every department and to the fullest and best extent possible.

THE DIRECTOR OF CLINICAL PSYCHIATRY

In a large hospital for the insane the work of examining all new cases personally and of supervising satisfactorily the details of the clinical work of the staff is of huge proportions. At the Manhattan State Hospital the position of clinical director was created for the purpose of making some one directly responsible for this part of the hospital's work, with these main objects in view; namely, the attainment of higher standards of clinical observation, and the stimulation of interest in the scientific and research sides of psychiatry.

The clinical director conducts staff meetings daily, except on Sundays and holidays. He sees that all new cases are properly studied and presented before the staff; that these are again brought before the staff after two or three months' observation, and then summarized with a final diagnosis, if possible; that cases, when convalescent, are presented before the staff for final review; also that unrecovered patients, whose relatives ask for their release, are carefully considered preparatory to a recommendation to the superintendent as to the advisability of permitting them to leave the hospital. If any new cases are too weak or too disturbed to be brought before the staff they are seen at the bedside by the clinical director with the physician in charge of the case, and a note of the diagnosis and treatment is entered in the history.

He is responsible for the careful collection of all statistical data, which are compiled on separate cards for the admissions, discharges and deaths. These data form the basis for an annual report made by him on the diagnostic grouping of the new patients, with comment on the various clinical groups. Tables and analyses of the deaths and discharges for the year are included in this report.

Among his other duties are visits to the various services for the purpose of observing how the medical work is being conducted, and of seeing that the clinical records are properly kept. Individual patients are examined with the ward physicians and suggestions made as to further observation and study. Special therapeutic measures are supervised by the clinical director, who, with the ward physicians, selects cases for such treatment. This includes occupation-therapy, re-education of deteriorated patients, electrotherapy and hydrotherapy. Cases suitable for psychoanalysis are assigned to physicians interested in this line of work. He makes recommendations to the superintendent regarding the assignment of physicians to the various services, and the organization of the medical work generally. Patients who apply for voluntary treatment are referred to him, and he examines them and makes recommendations to the superintendent regarding the suitability of each case for admission and treatment. He supervises the parole system and is kept informed regarding patients who fail to report. He also passes upon the advisability of extending the parole of patients beyond the usual period.

During each year the clinical director gives a series of lectures or demonstrations to the junior members of the staff, for the purpose of acquainting them with the underlying principles of psychiatric diagnosis and directing their attention to various problems of scientific interest. He also carries on research work along various lines, and

endeavors to stimulate the interest of the physicians of the staff generally in psychiatric problems of scientific and practical importance.

ASSISTANT MEDICAL OFFICERS

The general hospital medical work should be divided into services under the immediate direction and supervision of experienced superior officers. The most important service is the acute reception service, where all new cases are received, thoroughly examined, and their case histories prepared. The services covering other classes of patients, including convalescents, mild cases of chronic insanity, able-bodied working patients, the disturbed, the sick, the untidy, etc., should be under the immediate control of assistant physicians or interns who have been trained sufficiently long in the service to assume such responsibility. The duties of the woman physician include the gynecological examination of new cases, the care and treatment of women employees who are sick, and, under certain conditions, the responsibility of a small ward service.

STAFF MEETINGS

At the Manhattan State Hospital staff meetings for clinical demonstrations are held each week-day, except on holidays, from 8:30 to 10:15 a. m. Three meetings a week are devoted to the consideration of the men and three to the women. Each new patient, as soon as the mental and physical examinations have been completed, and, if possible, an anamnesis (past history) has been obtained, is presented before the staff by the physician who has worked up the case. The work of each physician is thus brought before the staff for review, and the patient given an opportunity to express his views. If there is any doubt about his being a suitable case for hospital treatment, the fact is noted and the question settled after a reasonable period of observation, usually not longer than three or four weeks.

As the new cases are presented, interchange of opinions and helpful criticisms are invited from the physicians, attention is directed to oversights in the history, or to deficiencies in the observation of symptoms, suggestions are made concerning further study of the case, and therapeutic measures and questions of general management are discussed. After this preliminary review, unless there is indication of a rapid recovery, the patient is usually transferred from the reception ward to the division best adapted for further observation and treatment. When he has been in the hospital two or three months the case is again taken up in staff meeting. The patient's physician at this time submits a summary and differential diagnosis based on all the facts that have been obtained from the anamnesis and the observation to date. Examination of the patient and discussion of the case follow. At this time the case may be placed in one of the diagnostic groups, if the symptoms are sufficiently characteristic. If there is any doubt regarding the diagnosis this may be deferred for further study.

As a commentary upon the thoroughness of the original examination it may be mentioned that the final summary diagnosis agrees with the tentative one made on the original presentation in approximately 90% of the cases, the remainder being obscure and anomalous cases in which a prolonged examination is necessary to arrive at a correct understanding of the condition. When the case is summarized a statistical data card, carefully compiled, is submitted by the physician. These data are used in making up the annual report. Convalescent patients, or those whose release is requested, are referred to the social service agent, who attends the staff meetings at which cases for parole are considered.

RECEPTION SERVICES

Every state hospital should have two admission services, one for each sex. Immediately upon admission all patients should be placed in bed for observation and examination. Small dormitories should be used for this purpose, but on both reception services there should be a few single rooms available for those who do better alone or require special nursing. Every effort should be made to obtain a hospital atmosphere and to impress upon patients the idea that they are regarded as sick persons in need of medical care.

To meet the demands of a very active reception service, the clinical organization should provide each admission service with a relatively large proportion of physicians: a senior assistant in charge, and associated with him other physicians, designated as assistants and interns. The one in charge and his assistants should have their offices in and make their examinations on the receiving wards, where they remain at work throughout the day. This regulation should apply also to the other services of the institution.

The preliminary or admission notes are usually made at once, to be followed as soon as possible by a thorough physical examination and a complete mental status as a rule within two or three days after the patient's arrival. The anamnesis is obtained from relatives or friends at their first visit. If expected visitors do not come promptly a letter is sent, requesting them to call as soon as possible. The history of the case and the clinical notes are dictated to stenographers, two of whom

are assigned to each admission service. The typewritten records are kept on the reception wards, in suitable files, until the case is transferred to another service; then the clinical history goes along with the patient in order that further observation may be taken up intelligently and continued.

The method of examination and keeping case records at the hospital should be of a varied and comprehensive character. Thus there results a mass of records which are valuable not only in further elucidating psychiatrical problems, but also in guiding and directing intelligent therapeutic effort.

At the Manhattan State Hospital every patient on admission is placed at once in bed, there to remain until the physical examination is completed, the result of which determines the necessity for further rest in bed. First of all a superficial examination is made for marks of identification, injuries, or any serious disorder requiring immediate attention, all of which are duly recorded, together with the treatment instituted. Later, a more extended physical examination is made according to a general outline which embraces all necessary points of inquiry in the ordinary case, but which also calls for the most detailed examination of any abnormal condition. To avoid the use of printed forms and their resulting evil—mere routine work—the record of the examination, which follows the outline closely, is typewritten upon blank sheets. The examiner is thus allowed all latitude in expressing his findings, while at the same time, following the outline as he does, he overlooks no point. A survey of the outline shows its comprehensive character. With a paragraph for a description of the general type, appearance and condition, including anthropological make-up, general state of nutrition, evidence of acute or chronic disorders, the neurological examination is first undertaken following the segmental development of the nervous system. Thus, after a paragraph devoted to general and subjective sensations, the special senses are first examined in segmental order. Then the condition of the cutaneous sensibility is determined, including subjective complaints, stereognostic sense, sense of position, etc. Next comes the examination of the

FIRST ADMISSION. FEMALE.

STATE HOSPITAL.

Committed.....

Name..... Identification No..... Legal Status—Voluntary .....

Psychosis—No..... Group..... Type.....

Nativity { State or Country / See U. S. census tables } of patient.....of father.....of mother.....Time in U. S. .....

Citizenship—of patient—American.....foreign.....of father—American.....foreign..... Has patient been naturalized?.....

Color—White.....black.....yellow.....red..... Civil condition— Single.....married.....widowed.....divorced.....separated.....

Education—None.....reads and writes..... common school.....high school.....collegiate.....

Occupation .....

Religion (denomination) ..... Race.....

Environment—City.....village.....rural..... Circumstances — Dependent.....marginal.....comfortable.....

Actual residence—County ..... P. O .....

Legal residence .....

Etiological factors other than heredity.....

.....

.....

Constitutional make-up—Defective.....inferior.....normal.....

Heredity (nervous diseases and insanity).....

.....

.....

.....

Alcoholic habits—Patient { abstainer / moderate / intemperate } father { abstainer / moderate / intemperate } mother { abstainer / moderate / intemperate } other relatives (specify).....

.....

Accompanying physical diseases.....

.....

Duration of present attack before admission ..... years..... months.....days.....

No. of previous attacks.....

DATE OF ADMISSION.....19..... Age on admission .....years.....

Presented at staff meeting.....19..... by Dr. .....

+ = Facts not ascertained..... Hospital No. for the year.....

Note.—This card for first admission to any hospital for the insane.

Fig. 1. Admission Card employed at the Manhattan State Hospital. The Re-Admission Card follows the same general style, but is printed on yellow paper.

vasomotor and trophic conditions. In turn the various motor functions are examined, both deep and superficial reflexes are tested, the presence or absence of fibrillary twitchings is noted, while tremors and conditions of speech are made objects of special inquiry. In aphasic conditions a special detailed outline is followed, which is, of course, unnecessary in the majority of cases admitted. The condition of the organic reflexes and their control is determined, the question of convulsions is inquired into, together with the matter of sleep

DISCHARGE. FEMALE.

..... STATE HOSPITAL.

Name..... Identification No ..... Committed ..... Voluntary.....

Psychosis .....

Age on discharge ..... years.....

Residence when admitted—County..... P. O. .....

{ Street and No. / or R. F. D. route.....

No. of previous attacks.....

No. of previous admissions..... Date and duration of each previous hospital residence { exclusive / of parole }

.....

.....

Duration of last psychosis before admission ..... years..... months.....days.....

Date of last admission.....

Duration of last hospital residence { exclusive / of parole } ..... years.....months.....days.....

Period of last hospital treatment { inclusive / of parole } ..... years.....months.....days.....

Condition on discharge—Recovered.....much improved.....improved .....unimproved .....

.....not insane (inebriate).....not insane (drug habitué) .....not insane (specify).....

Date of parole.....19 .....

DATE OF DISCHARGE.....19.....

Patient was discharged to the custody of.....

Address.....

.....

.....Hospital discharge No. for the year.....

+ = Facts not ascertained.....

Fig. 2. Discharge Card employed at the Manhattan State Hospital. The Death Card follows the same general form, printed on blue paper. This card printed on pink paper.

and dreams, and a paragraph is devoted to each, respectively. Following the above, the ordinary physical examination of the thoracic and abdominal organs is made. After the completion of the physical examination it is customary to summarize the essential findings, thus avoiding the necessity of searching the detailed record for the most important abnormalities.

The mental examination is then taken up, when there are no physical contra-indications. This follows a detailed outline likewise. An effort is first made to obtain an idea of the spontaneous mental activity and the nature of the stream of thought forth under this heading, showing whether the patient is in a restless, retarded, rigid or other unusual motor condition when speaking. The next division of the mental examination is the general mental attitude, which includes inquiry into the emotional reaction and special moods, with a detailed analysis of delusional and hallucinatory states. Orientation and mental grasp are then determined, this being a special inquiry into the condition of the sensorium as regards the patient's knowledge of time, place and personal relations. Memory of the recent past is determined, and according as the patient is induced to

give data of his life, his memory of the remote past is judged. Under the heading of personal data the examination is extended to all matters occurring throughout the patient's life which may be deemed to have any bearing upon the situation. Retentive power is taken up, the patient's grasp on school knowledge and general information is ascertained, and the latter is then compared with the educational opportunities afforded the individual in question. The same is done regarding the ability to count and calculate, read and write; and a specimen of the writing is filed whenever possible. An idea of the patient's insight regarding his own condition, and of his general judgment, is sought. Then the mental examination is concluded with a paragraph detailing the general attitude and manner. A summary paragraph is made, similar to the one following the physical examination, wherein the important diagnostic points are grouped together, and where it is possible to find a statement of the more important deviations from the normal. If the patient be in a delirious, stuporous, or mute state, of course we have to content ourselves by limiting this detailed examination. In such instances the attitude and manner are more fully described, including the motor reactions, and every effort is made to obtain differential diagnostic points.

While the above general outline is followed whenever possible, the rule is invariably observed of fitting the examination to the individual patient. For instance, if a patient is weak, the mental examination is conducted in brief interviews, at intervals, until all the various points have been covered. At the end of two or three months a summary of the case is made. The case record is sent to the central office for filing, together with one copy of the summary which is filed under the proper diagnostic heading. By this arrangement it is possible to study any group of cases without having to wade through the case records. With the typewritten records obtained in this way, treatment can be intelligently inaugurated with a view of alleviating the mental, as well as any physical, disorder that may exist. At frequent intervals additional notes are made, both as to mental and physical conditions, including a record of the treatment with the results obtained from day to day.

SPECIAL SERVICES

The tubercular insane should be segregated in suitable camps or special buildings, equipped for their particular needs, where they may get the full benefit of fresh air and sunshine. Those who suffer from physical disease, either of a surgical or medical nature, should be placed in special wards of a general hospital type, with operating rooms properly equipped. These wards should be in charge of men who have had both general hospital experience and training in psychiatry. Certain classes of the acute insane, such as those who suffer from acute delirious conditions, anemia, and insomnia, do much better in open-air camps. Therefore, every hospital for the insane should be provided with limited accommodations for this class of patients. In addition to these special services it may be added that a training school for nurses is an essential feature in the medical organization and a good hospital procedure.

RE-EDUCATION CLASSES

Every well organized hospital for the insane should have classes for the re-education of patients, where therapeutic occupation may be carried on. At the Manhattan State Hospital the supervisor of this department, under the direction of physicians, instructs the patients in arts and crafts, and takes charge of the classes in folk dancing. She not only has immediate charge of special classes, but also instructs the nurses so that individual cases may receive special attention along these lines.

SOCIAL SERVICE

It is important that the hospital maintain an out-patient department with facilities in the hospital, or in the neighboring city or town, for consultation, advice and treatment of borderland cases who may need medical advice and care, but do not require commitment. This service in state hospitals generally might be extended so as to have office hours at stated times in villages and towns more or less remote from the hospital, covering practically the entire district from which the hospital draws its patients. Such an arrangement would undoubtedly be more than self-sustaining, since it would prevent the commitment of a considerable number of patients who might be cared for at home under proper supervision. This provision should include the services of one or more nurses, who might go to the homes of patients for limited periods to instruct the family in the care of the patient along the lines of hospital treatment.

A distinct and definite plan of after-care should be a part of each hospital management, and should cover supervision of patients for considerable periods of time after they leave the institution. This should include assistance in finding places for those who have no homes or friends, and should extend a helpful hand to aid them in securing employment of a suitable kind.

CLINICAL AND PATHOLOGICAL LABORATORIES

At the Manhattan State Hospital the pathologi-

cal and clinical laboratory work is carried out under the direction of the pathologist in a separate laboratory building; this building includes the autopsy room, which is provided with seating accommodations for the entire staff, the histological laboratory and embedding room, and a clinical laboratory, which is well equipped for bacteriological examinations, as well as for the regular clinical methods. A woman technician, a woman stenographer-technician and a layman assistant devote their entire time to laboratory duties under the direction of the pathologist.

The photographic department is in a separate part of this building in order that gross and microscopic photography, which is frequently used, may be easily available. The photographer cooperates with the pathologist in this work. The hospital medical library, with the current medical periodicals, is also located in the laboratory building, that the medical literature may be accessible to members of the staff. Provision is made for circulation of the books.

In cases coming to autopsy, the permits for which are obtained by the ward physician from the nearest relative or friend, a complete postmortem examination is made, including the removal of the spinal cord in organic cases. A dictated report of the findings is made at the time of the autopsy. A clinical summary of each case is furnished the pathologist by the ward physician, and a careful attempt is made to correlate, as far as possible, the clinical and anatomical findings, which latter include the microscopic examination not only of the nervous system, but also of the other organs. The final typewritten report of the pathologist contains an abstract of the clinical summary, the gross and microscopic pathological findings, and comment on the case. One copy of this report is filed in the patient's history and a second copy is retained for the laboratory records.

At regular meetings of the entire staff in the laboratory, the cases which have come to autopsy are taken up from the clinical as well as the anatomical standpoint. The anatomical presentation includes the demonstration by a special projection apparatus of the gross and microscopic sections and lantern slides. Each case is fully discussed. In addition to holding these general staff meetings, the pathologist gives demonstrations of the various disease groups to the newer members of the staff in connection with the lectures of the clinical director. Thus physicians soon after entering the hospital become acquainted with the anatomical as well as with the clinical phases of their cases.

The routine clinical laboratory examinations are made by certain ward physicians assigned to that work, which is carried out under the direction and with the assistance of the pathologist. Special clinical examinations, such as the examination of sputa, throat and other cultures, and blood examinations, are made by the pathologist himself. Index cards of the blood and spinal fluid and all the throat and sputa examinations are kept in the laboratory, so that the results of such examinations may be easily accessible. All lumbar punctures on patients selected for this procedure are performed by the pathologist on regular days set aside for this work, and the cell count and globulin tests are made by him. He is also responsible for the serological examinations.

In the preparation of this paper, instead of treating the subject theoretically by laying down certain principles and methods, we have endeavored rather to set them forth by a concrete example. Many modifications may be made to fit the individual institution. For instance, in the smaller state hospitals the superintendent must perform many of the duties assigned at the Manhattan State Hospital to the first assistant physician, thus enabling the latter to give more time to purely medical matters. One of the most important principles in state hospital management is the direct chain of responsibility from the lowest to the highest; thus the attendant and nurse are responsible to the charge nurse, she in turn is responsible to the supervisor, and so on through the chief supervisor and medical officers up to the superintendent. In no system of state care for the insane can an efficient line of responsibility and good management be established and maintained where party politics interfere.

In conclusion, it might be stated that decency and humanity require that women patients should be brought to the hospital by trained women nurses or attendants provided by the hospital. In fact, all patients should be accompanied by those who are trained in the care and management of the insane, and whenever necessary a hospital physician should be detailed in addition.

The earliest case in which medical attendance was given was a case of insanity. The physician was Melampus, one of the most ancient of the Greek physicians, of Argos, who was summoned by Proetus, King of Argolus, to attend his three daughters who were stricken with insanity, according to tradition, because they neglected the worship of Bacchus.

At the ceremony attending the opening of the Hospital of St. Clothilde in Flanders in 1362, when 30,000 people were assembled, a collection was taken up to help support the hospital, and an amount exceeding $10,000 in our money was subscribed. This founded a permanent fund to take care of women who were unable to support themselves during the period immediately following childbirth, and were dependent upon charity for their maintenance.

THE RELATION OF THE OPHTHALMIC DEPARTMENT TO THE GENERAL HOSPITAL

Specialists Should Have the Benefit of Consultation of Their Fellows in Other Branches —Local Diseases Are Often Systemic in Origin—Hence Any One Service Needs the Inspiration and Special Training of All—General Hospitals Ideal for the Care of Special Diseases

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MANY years ago the famous Huxley observed that it was a peculiarity of the medical sciences that they were *imperfect* in proportion as they were *independent*. Be this as it may, the pros and cons of the question of over-specialization have been frequently ventilated and thoroughly discussed of late, and it has, indeed, been most interesting to note the conflicting views of eminent men in regard to the extremely evident tendency on the part of physicians to abandon the older and broader ideal of the general practitioner or general surgeon and limit their activities to smaller, well defined fields.

However, the writer does not presume to dwell upon either the merits or disadvantages of this present-day trend toward specialization, except in so far as it has involved the relation of general medicine and surgery to ophthalmology; and before this can be done, it would seem opportune to digress momentarily and briefly sketch the history of the latter in respect to its development and its association with medicine.

Prior to the nineteenth century so little was known concerning eye diseases, and their importance was so underestimated that ophthalmology, as a specialty, was left in the hands of the most outrageous quacks and itinerant "healers," who professed ability to cure any ocular maladies by simple massage, charms, incantations and like extraordinary procedures. Indeed, with no higher preparation than that afforded by their former vocations as tailors, cobblers, etc., some of these men attained such prominence that they were actually knighted for their services.

In fact, it was not until the early part of the nineteenth century, at least in England, that pathological conditions of the eye became of such importance as to merit the attention of the entire medical world, and the occasion for this was the frightfully rapid, country-wide dissemination of ophthalmia by the soldiers returning from Egypt after the Napoleonic invasion. This served as the stimulus for the realignment, and the treatment of the eyes gradually became a part of the duties of the physician instead of the quack. Then followed the attainments and discoveries of Saunders, Lawrence, and others, general surgeons, and cataract as well as external eye conditions became familiar pathological subjects.

However, the real significance of the intimate ophthalmo-medical relation was not to be appreciated, or even dreamed of, until 1851, when "the physiologist of Konigsberg," von Helmholtz, through his discovery of the ophthalmoscope, revealed to the profession a hitherto unknown, and still half developed, aid to general diagnosis. Small wonder that von Graefe, destined to such fame and recognition, when perceiving for the first time the normally functionating blood vessels, choroid, retina and optic nerve, jumped to his feet and excitedly exclaimed: "Helmholtz has discovered for us a new world! What is there left to be done?"

But a great deal was and is left to be done, and Bowman, Jonathan Hutchinson, Donders and others have added their full shares to the magnificent work, and have illuminated the pages of medicine with their achievements. Remarkable as it may seem, some of the greatest discoveries in connection with the eye were accomplished through the work of men who were not ophthalmologists as such, and there is no doubt but that the interpretation of these ocular changes, as manifested by the ophthalmoscope, tonometer, perimeter, phorometer, etc., must be left to the physiologist, pathologist, internist or surgeon. The oculist of today can look through the window into the room, but his more liberally trained brother has the keys to the whole house. The former may diagnose glaucoma, cataract, primary or secondary optic atrophy, papillitis, choked-disc and the like, but the latter must, in the long run, study out for mankind the primal causes, *modus operandi*, and systemic changes encountered. Following the rule laid down by conscientious oculists the world over, the writer invariably seeks consultation, medical, surgical or special, in these and many other ophthalmic conditions which do not immediately and satisfactorily respond to his local and constitutional treatment, or in which the diagnosis is at all doubtful. Quoting Cushing: "One thing which has kept the so-called general surgeon from getting a distorted image of his patient's malady—a vice of which the specialist is often accused—is

his wider experience with disease affecting the body as a whole; and it would be rejuvenating to many of the surgical specialists if they could be periodically absorbed by general surgery, to be born again under the leadership of individuals, who, through fresh contributions, could give a new impulse to a senescent subject."

Unfortunately, though, especially in the United States, ophthalmology has perhaps been considered too distinct a branch of medicine to be kept quite strictly divorced and separated from the influence of the latter; large eye hospitals, often far removed, have been erected in almost every city, and the ocular cases, such as cataract, glaucoma, iritis, irido-cyclitis, panophthalmitis, choroiditis, strabismus, etc., observed in the general hospital clinics, are daily being sent to these institutions by the thousands. Surely this is a wilful waste of material.

It is distressing, of course, to think of the poor patients who are thus exiled under the sole care of specialists, because of iritis, glaucoma, and the like (conditions as systemic in their origin as tabes or nephritis), when, as is the prevailing custom on the "Continent," they could be housed in *general hospitals*, where they would be under the coordinated care, not only of specialists, but of physicians, skilled laboratory workers, microscopists, roentgenologists, and others. How much obscure etiology might thus be cleared up, how much added to our scant therapeutic knowledge upon certain subjects; how much, perchance, of new and valuable data upon associated dyscrasias might be gleaned by the internist? The possibilities are too far-reaching to compute.

There is an old saying and one quite apropos: "The specialist should be a trained physician, a skilled surgeon and something more." In pursuance of this thought, it is very definitely true that little has been gained, for the advance in the knowledge of the pathology of ocular maladies, in the special hospitals—there is too confined an environment, and minds become essentially narrowed. But think of the large general hospitals! Reflect upon the marvelous discoveries that have emanated from the ophthalmic department of the great Allgemeine Krankenhaus, in the University of Vienna, where, in radiant succession have shone the suns of the world-famed ophthalmologists, Arlt, Jaeger, Bergmeister and Fuchs! The intimate relation of the general hospital and the eye department has made possible the expansion of ophthalmology. How closely ocular disorders are related to, or dependent upon, systemic dyscrasias is being shown every day by the discovery of general diseases causative of eye conditions hitherto regarded as purely local and treated accordingly with little or no satisfaction. And this simple and natural relation of general and ocular maladies is so easy to comprehend when we follow the observations of those who have shown how rapidly and surely drugs, etc., ingested or introduced into the circulation, are carried into the intraocular tissues through the rich choroidal anastamoses and even found in the humors.

But equally sad is the loss to the general physician of the opportunity to study and know about these cases, often merely signboards to deeper-rooted and unsuspected faults, and to the student, if the hospital be in connection with a medical school, of the chance to derive a befitting and proper knowledge of ophthalmology, especially as it pertains to general medicine and as it will manifest itself in his future practice. It would, most assuredly, be a case of "chickens coming home to roost," should the graduate of a celebrated medical school fail to recognize as serious some tractable but severe ocular disease, and the patient become blind as the result of his ignorance. No first-class school of medicine should leave room for such eventualities.

A brief statistical table has been compiled, the last four years' work in the following general infirmaries being reduced to an annual average:

Name of Hospital	Number of Eye Operations	Number of House Eye Patients	Number of Dispensary Eye Patients	Number of Beds in Hospital for Eye Patients
Allgemeine Krankenhaus, University of Vienna	2,379	21,699	32,500	210
Aberdeen Royal Infirmary	179	205	4,097	16
Bern University Hospital	476	1,023	4,974	75
Breslau University Hospital	864	1,151	5,724	70
Berlin University Hospital, Charite	421	602	7,903	55
Dayton Hospital	304	342	.....	†
Episcopal Hospital of Philadelphia	586	300	4,717	†
German Hospital of New York	207	250	4,478	8†
Guy's Hospital of London	227	354	6,831	33
Hospital Lariboisiere, Paris	723	749	21,116	46
Heidelberg University Hospital	665	1,411	9,284	110
Hospital of Jefferson Medical College, Philadelphia	134	1,244	6,302	16†
Hotel Dieu, Montreal	282	192	1,371	25
Hospital of University of Munich	597	1,614	8,850	100
Hotel Dieu, University of Paris	252	810	5,800	67
Johns Hopkins University Hospital	18	28	1,148	.....
London Hospital	260	482	8,548	25
l'Hotel-Dieu du Precieux Sang, Canada	710	541	1,287	†
Michigan University Hospital	293	285	1,263	28
Medico-Chirurgical College Hospital, Philadelphia	618	?	18,880	30†
Mt. Sinai Hospital, New York	180	226	?	10
Pennsylvania University Hospital	423	230	15,282	11†
Philadelphia General Hospital	80	388	.....	66
Royal Infirmary, Glasgow	631	1,056	42,776	35
Royal Infirmary, Sheffield	443	440	3,363	42
Royal Victoria Hospital, Montreal	244	266	4,042	†
Rhode Island Hospital	112	246	1,210	†
St. Bartholomew's Hospital, London	234	311	3,981	25
St. Luke's Hospital, Chicago	115	201	.....	†
St. Louis Hospital	80	841	5,819	†
St. Michael's Hospital, Newark	192	?	2,211	10
St. Thomas' Hospital, London	167	297	9,132	25
Toronto General Hospital	160	228	2,922	††

†Not limited—as many beds as necessary allowed in general wards.
††Special eye, ear, nose and throat ward as well.

It will be readily appreciated that these figures in no way represent the enormous ophthalmic work carried on under the roofs of the great spe-

cial institutions, such as The Royal London Ophthalmic Hospital (Moorfields), The Massachusetts Charitable Eye and Ear Infirmary, or the similar hospitals in New York and elsewhere; but they do convey a fair idea of the interest manifested by large general hospitals in ophthalmological cases, particularly by those institutions in connection with medical schools. In addition to those quoted above, there are a number of other hospitals which conduct excellent eye services: Freedman's Hospital, of Washington, 18 beds; New York City Hospital, 20 beds; South Side Hospital of Pittsburg, New Haven Hospital, and many others, 10 beds each. There are a great many hospitals in which much eye work is done and in which beds without restriction are allotted in the surgical or medical wards, such as the Cincinnati General, etc. In the Bellevue Hospital separate eye wards are now nearing completion and one of the twelve general operating rooms will probably be taken over for ophthalmic use, while the superintendent of the Minnesota University Hospital writes that they plan shortly to add to the number of eye beds because they recognize the inadequacy of the present number to provide for the ever increasing ophthalmic cases.

However, in addition to these quotations, replies have been received from a number of large general hospitals which have no ophthalmic service whatever, being compelled accordingly to send their eye cases to special institutions. It is rather deplorable to note that in some of these great institutions a bed would gladly be given for a patient who must undergo some minor surgical operation, yet from their doors are routinely turned away patients blind from cataract, glaucoma and other remediable surgical or medical ocular affections. What, but a matter of life and death, can compare in urgency or appeal with that grim ogre, Blindness?

The result of this is only too evident. Scores of extremely instructive cases, which would, undoubtedly, be of real interest to physicians and students alike, are lost to the hospital and the medical classes, with the broad possibilities for studying the underlying as well as the local states; perfection of cooperative service, by efficient representation of all departments, is wanting; the morale of an up-to-date ophthalmic operating clinic, in connection with the other special systems, is lost, and the students must leave one of the greatest medical schools in the country, perhaps, with little more than a superficial knowledge of ophthalmology or its relation to medicine, gleaned from poorly attended didactic lectures or a few drowsy afternoons in a pitifully meagre dispensary clinic. It would be most amusing, if it were not tragic, to see surgical residents, well trained in other respects, testing simple perimetric form fields in such a manner as to render absolutely worthless any results thus secured.

At the Johns Hopkins Hospital, with a skilled chief and associate, and through the efforts of sympathetic assistants and an energetic, far-seeing director, the standard of the eye dispensary has been raised to a plane favorably comparable with that of most of the out-patient departments of our American hospitals.

It is interesting and gratifying to note the unusual calibre of the ophthalmic work done in two of the medical schools of our neighboring city, Philadelphia, viz.: the University of Pennsylvania and the Medico-chirurgical College. The wonderful clinic at the former has been built up and maintained through the efforts of a man who is known the world over, not only as an ophthalmologist, but as a pathologist and neurologist as well. It is needless to remark upon the intimate relation of de Schweinitz's department and the general hospital, or of the regard for and dependence upon the ophthalmological service in the University Hospital.

At the Medico-chirurgical Hospital, an institution of only 216 beds, a celebrated eye clinic has been erected solely through the surgical dexterity of one man. He performed 850 eye operations in the hospital from June 1, 1913, to June 1, 1914. This surgeon, likewise, considers a general hospital superior to a special hospital for eye work, for the reasons already outlined. In both of these institutions the highest type of departmental efficiency and coordination is realized.

Surely, among the fellow-toilers in hospitals such as those connected with the universities of Paris, Vienna, Berlin, and numerous others, abroad and at home, must prevail what Thayer, with his characteristic and expressive style, has alluded to as "the peculiar pleasure and satisfaction which arise from the realization of the unity of science, and of the inevitable fellowship of disinterested searchers for truth, no matter how divergent their ideals."

The eye service should not, therefore, be merely an undesired, gangrenous extremity, sharply demarked from the hospital general; it should most properly be a living, sympathetic, vital corpuscle in the complex, inter-related circulation of the great, throbbing, magnificent body—the perfect hospital.

In India, King Asoka, who reigned in the third century before Christ, published an edict commanding the establishment of hospitals throughout his dominions. Not only did he do that, but he arranged that free lectures be given to his people on preventive medicine, "for," as the edict reads, "Asoka is grieved to see how many people die of disease that can easily be cured or prevented."

AGNEW'S STATE HOSPITAL, AGNEW, CALIFORNIA

An Institution "Dreamed Out" by Dr. Leonard Stocking—The Dream Came True—Making a Unique Home and Hospital for the Mentally Sick

By DR. EVA CHARLOTTE REID, After-Care Physician for California State Hospitals; Assistant in Psychiatry, University of California Medical School; Chief of Psychiatric Clinic, University Hospital, San Francisco, California

Dr. Leonard Stocking.

THE old-fashioned "insane asylum" differs as widely in construction and equipment from the modern "hospital" for the treatment of mental disorders as the names would indicate. The former was constructed with a view to housing the largest number of inmates at the least possible expense. If the inmates recovered it was in spite of their environment and not because of it. In the latter, with its cheerful surroundings, hydro-electro-, sero- and ergo-therapy, its scientific and sympathetic study of each case and its constant effort in the direction of re-education, the patients are given every opportunity to regain their normal mental equilibrium and those who are considered incurable are surrounded by a homelike atmosphere and are provided liberally with recreation and amusements, which make life livable and even enjoyable.

In Agnew's State Hospital, California, this idea has doubtless been carried out more successfully than in any hospital of its kind in the United States and possibly in the world. This has come about largely because the superintendent, Dr. Leonard Stocking, a man of twenty-five years' experience, wide knowledge, and deep sympathy with the mentally afflicted, was favored by the elements which destroyed the old-style buildings at Agnew's, by a generous legislature which gave him a million and a quarter dollars to expend in erecting a new plant, and by a state architect who was broad enough to allow him to carry out his own plans, which were both practical and idealistic, in the construction of the buildings.

DESTRUCTION OF THE OLD AND CONSTRUCTION OF THE NEW BUILDINGS

At five o'clock on the morning of April 18, 1906, the earthquake which shook the Pacific Coast destroyed Agnew's State Hospital completely. Practically nothing remained but a mass of debris, the sewer system and the artesian wells. In twenty-eight seconds over 1,200 persons, including 1,075 patients, the employees and the medical staff were turned out on the lawns homeless. Dr. Stocking and his family were rescued from the wreck by a patient, who brought a ladder down which they climbed.

Almost before the ground had ceased to tremble, every person capable of assisting went to work. Some provisions were dug out of the wreck and at

Fig. 1. Agnew's State Hospital. Palm avenue leading to hospital.

10 a. m. coffee and bread were served on the lawn. By night the stoves had been recovered and set up and the cooks were busy preparing food. That night everyone slept on the lawn. By degrees tents made out of seed-canvas, and shacks out of lumber obtained from the debris, were erected. In these the women were housed. The men slept on the lawn until fall. Ninety-nine of the most demented patients were sent to the other state hospitals. Of the 976 patients who lived on the lawns and in tents and shacks without bars or screens for more than three months, only 15 men and one woman wandered away. Although the plumbing and all sanitary arrangements had been completely destroyed, the place was kept in excellent condition and not a single case of illness occurred.

By November temporary barracks had been erected. The entire population being comfortably housed and everything in good running order, Dr. Stocking felt free to turn his attention to the plans for the construction of permanent buildings. With this in view he visited the best hospitals in America, but copied none of them. In his mind's eye was the ideal hospital, and with this constantly before him he worked out his plans. In this the "asylum" features were to be eliminated. The acute cases were to be treated by all the modern scientific methods, as in a psychopathic hospital. The chronic cases were to be surrounded by a cheerful, homelike atmosphere which would make them contented and happy. To combine with this the maximum amount of economy, convenience and efficiency in administration was the task to which he set himself. How well he succeeded only those who have visited the hospital and who have made a study of problems of this kind can understand.

Dr. Stocking had had some training in mechanical drawing, and with a drafting board and a set of instruments he went to work. He blocked out the general scheme for the entire plant and then worked out the plans for the individual buildings, one after another. It was a task calling for inspiration and sound practical knowledge.

Fig. 2. Agnew's State Hospital. Corner of treatment building and corner of women's receiving building, with arcade connecting them; and corner of employees' dining building.

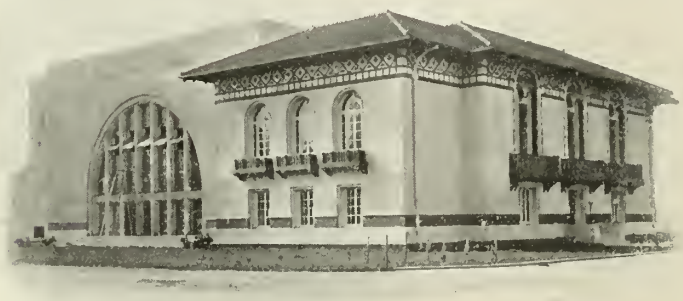

Fig. 3. Agnew's State Hospital. Social center, including club rooms, banquet hall, dance hall, theater, church, etc.

In the center of the group of buildings is the hospital group, which consists of the treatment building, flanked on either side by the male and female receiving buildings. In the treatment building are a receiving room for patients, a reception room for visitors, the office of the medical staff and the superintendent of nurses, the male and female hydrotherapeutic departments, three large, well equipped laboratories, the dispensary, operating rooms, dental office, ear, eye, nose and throat room, electro-therapeutic room, x-ray room, photographic gallery, and psychological laboratory. On either side, and connected with the treatment building, are the male and female receiving buildings, with four wards each.

In the rear, and connected with the hospital group by arcades, is the domestic group, comprised of dining rooms for officers and employees,

the kitchen, bakery, refrigerating plant and commissary departments, all connected by arcades. The kitchen is centrally located, and from it run service walks to all the surrounding cottages.

In the rear of the domestic group are the power and heating plants, the laundry and shops.

On either side of the hospital group are the cottages for the better class of patients, and in the rear those for the demented and noisy.

Fig. 4. Agnew's State Hospital. Cottage for patients. Notice absence of screens and bars throughout.

Situated near the entrance to the grounds is the administration building, which is not connected with the hospital proper. Here the offices of all the different business departments are concentrated. Opposite the administration building is the social center. This includes an assembly hall with a large, well equipped stage, club rooms, card, billiard, pool, reading and serving rooms, also a banquet hall equipped with dishes and utensils for serving refreshments.

Fig. 5. Agnew's State Hospital. Convalescent home, with kitchen and everything complete for living. Here patients take care of themselves. Note absence of all screens or bars.

Every ward is equipped with a tub and shower bath. Each one of the wards in the receiving buildings has two continuous bath tubs. In the entire hospital there is not a basement room. Every room is well lighted, well heated, and well ventilated. There are no dark corners and no dust catchers. Everywhere are flush panel doors, round corners and coves. Every ward has a porch so situated as to exclude neither light nor air from the ward. Every dormitory has cross ventilation —windows on both sides. Every sleeping room has sunshine and every dining room has windows on two, and most of them on three sides. The laboratories, operating and special treatment rooms and photographic gallery are on the north side.

No two of the cottages are alike. Each one was specially designed for a particular class of patients and designed and equipped so as to best fulfil its purpose. Those for the better class of patients are designed to furnish the maximum amount of privacy, freedom and change. Those for the more demented class are designed so that supervision is made easy. Every detail of construction, even to the locking system, has received the most careful and painstaking attention of Dr. Stocking.

CARE AND TREATMENT OF PATIENTS

Segregation of the different classes of patients is carried on from the time the patients enter Agnew's until they depart. Many patients have been in the hospital for months and have left without seeing a noisy, destructive or violent patient. In this way a tremendous amount of psychic shock is spared the refined patients who are suffering from mild mental disorders. When the patients are admitted they are received in the treatment building by the superintendent of nurses and the physician. The latter, after a brief examination, assigns the patients to the wards to which they appear to belong—the quiet and depressed to one ward, the noisy and excited to another, the physi-

cally sick to another. This segregation is maintained throughout the patient's stay in the hospital, in the treatment, dining and work rooms.

Even in their amusements the patients are segregated. The demented attend the moving picture entertainments in the afternoon, the better class in the evening. Every effort is made to keep the patients busy, and to furnish each one with the employment for which he or she is best fitted. Recreation and amusement are furnished in the form of basket-ball, baseball, moving pictures,

Fig. 6. Agnew's State Hospital. Hall and stage; part of the social center.

theatricals, and dances. Among the attendants is a former British army officer who is a good drill master, and under his supervision two companies of men patients were formed and carefully drilled. The change effected in the patients by this exercise is quite remarkable. On one occasion they camped in the mountains for two weeks. This camp was conducted with all the system and discipline of a regular military organization. Religious services are held every Sunday, conducted by the different denominations in turn.

A system of reward for good behavior is arranged by the promotion of patients to better cottages as their condition improves. The convalescent home is a goal toward which the female patients aspire. This is their final residence before being discharged. In this building, with the oversight of one attendant as housekeeper, the patients do all the work, cooking, serving, and cleaning. Attached to this and several of the other cottages are gardens where the women patients raise their own vegetables and flowers. Implements and seeds of any description they desire are furnished them, and whatever they raise they are allowed to use as they see fit. Nothing is done for the patients that they can be made to do for themselves, and the greatest possible amount of freedom is given them. Only one cottage on the female service has bars on the windows, and only two have the doors locked.

While visitors seeking information and those interested in the hospital from a humanitarian or scientific standpoint are welcomed at Agnew's and given opportunity to see every feature of the hospital, the morbidly curious are rigidly excluded, and the patients are protected from the gaze of sightseers and visitors. Every ward has a reception room for visitors, and in these the patients see their friends.

While great attention is paid to the physical and social well-being of the patients, the scientific side of the work has not been neglected. In choosing the medical staff Dr. Stocking selects men and women who have had special training in some specialty besides psychiatry. One physician on his staff at the present time has been specially trained in ear, eye, nose and throat work, another in laboratory work, another in surgery. The woman physician is a gynecologist and anesthetist. With the excellent equipment with which it is furnished the medical staff is capable of giving the patients the benefit of the most modern scientific treatment. Particularly good work has been done during the past year in treating the cases of general paresis and cerebral syphilis by the Swift-Ellis method.

Fig. 7. Agnew's State Hospital. Sitting room for patients, with corridor and additional sitting room at end, in distance.

THE SOCIAL LIFE

To my mind the most remarkable feature of Agnew's is the *esprit de corps* which exists throughout the hospital. When Dr. Stocking was interrogated as to how it was created and maintained, he replied: "I select not only the officers but every employee with the greatest care. The first consideration is their efficiency. With the attendants and trained nurses (of which we have a number) I consider their fitness to care for the patients, and their adaptability to different kinds

of work; among the male attendants we have men who are skilled in agriculture, horticulture, hospital work, etc. Next I consider their social qualifications. Among the officers and employees of the hospital we have a sufficient number of musicians to maintain an excellent orchestra and band. We likewise have vocalists, dramatists, baseball and basket-ball players, a moving picture operator and a drill master of no mean ability.

"Politics or personal friendships are allowed to play no part in my selection of officers or employees. Having secured good men and women, I make every effort to keep them. I try to keep them busy and give them every facility for whole-

Fig. 8. Agnew's State Hospital. General kitchen.

some enjoyment. They are provided with good food and comfortable, homelike quarters. The social center is a scene of constant activity for both patients and employees. All sorts of parties, concerts, plays and dances are arranged. I encourage these and see that they are properly conducted. I make it a point to drop in myself for an hour or two to watch the fun. If I find a feeling of discontent or dissension creeping in among the employees, I trace it to its source and eliminate the disturbing factor. I have found that one dissatisfied, disgruntled individual is often sufficient to disturb the harmony of an entire hospital.

"The hospital was built with the idea of securing for the patients and employees an abundance of sunshine, comfort and cheer, and I have endeavored to create and maintain throughout the institution a cheerful, helpful, contented atmosphere."

The consulting staff for the Burke Foundation for Convalescents, now open at White Plains, New York, has been formed as follows: honorary member, Dr. H. Ernest Schmid, White Plains; physician, Dr. Louis B. Chapman, White Plains; surgeon, Dr. Walter W. Mott, White Plains; department of eye, ear and throat, Dr. Frank N. Irwin, White Plains; nervous diseases, Dr. Wm. L. Russell, White Plains; city examining physician, Dr. Harry L. Bibby, New York City.

SEVENTH PAN-AMERICAN MEDICAL CONGRESS

To Meet in San Francisco June 17-21—Important to Medical and Hospital Interests

President Doctor Charles A. L. Reed, of Cincinnati, has sent out the following notice of the convening of the Seventh Pan-American Medical Congress.

The Seventh Pan-American Medical Congress will meet in San Francisco, June 17-21, inclusive. It assembles pursuant to invitation of the President of the United States issued in accordance with an act of Congress approved March 3, 1915.

The countries and colonies embraced in the Congress are the Argentine Republic, Bolivia, Brazil, Canada, Colombia, Cuba, Chile, Costa Rica, El Salvador, Ecuador, Guatemala, Honduras, Haiti, Hawaii, Mexico, Martinique, Nicaragua, Panama, Paraguay, Peru, Santo Domingo, United States, Uruguay, Venezuela, British Guiana, Dutch Guiana, French Guiana, Jamaica, Barbadoes, St. Thomas and St. Vincent. The organization of the Congress is perfected in these countries and the majority of them have signified their intention to be represented by duly accredited delegates.

The Congress will meet in seven sections, viz.: (1) Medicine; (2) Surgery; (3) Obstetrics and Gynecology; (4) Anatomy, Physiology, Pathology and Bacteriology; (5) Tropical Medicine and General Sanitation; (6) Laryngology, Rhinology and Otology; (7) Medical Literature.

All members of the organized medical profession of the constituent countries are eligible and are invited to become members. The membership fee is $5.00 and entitles the holder to a complete set of the transactions. Advance registrations are solicited and should be sent with membership fee to the Treasurer, Dr. Henry P. Newman, Timken Building, San Diego, California.

The general railroad rate of one fare for the round trip, good for three months, made on account of the Panama-Pacific Exposition at San Francisco and the California Exposition at San Diego, is available for the Pan-American Medical Congress.

The Palace Hotel will be headquarters.

The First Pan-American Medical Congress was most successfully held in the United States in 1893. Five intervening Congresses have been held in Latin American countries. It now devolves upon the medical profession of the United States to make this, the seventh, the most successful in the series.

Charles A. Reed, President, Union Central Building, Cincinnati; Ramon Guiteras, Secretary-General, 80 Madison Avenue, New York City; Harry M. Sherman, Chairman Committee of Arrangements, 350 Post St., San Francisco; Philip Mills Jones, Special Committee on Hotels, 135 Stockton St., San Francisco.

National School for Crippled Soldiers of France

The French government has definitely decided to establish a national school for soldiers crippled by injuries received in the war. This school will be equipped with the necessary apparatus for giving the soldiers, after they have received all possible medical and surgical treatment, courses in functional reeducation. These courses will be followed, when physical condition permits, by industrial education to provide a means of livelihood.

The school will be installed in the vast and convenient buildings of the Maison de Santé de St. Maurice, Department of the Seine. Technical instruction is made possible for the cripples by the proximity of the institution to extensive workshops. Accommodations will be arranged for about 700 inmates.

SOME ADMINISTRATIVE PRACTICES IN A SMALL HOSPITAL

Oregon Sanatorium Adjusts Expenditures to Income on a Sliding Scale—Some Items That Spell Success

By LEE MILLER, The Lee Miller Sanatorium, Portland, Oregon

HAVING worked in several institutions, both public and private, I have for a number of years gathered information on the care of patients with a view of operating a sanatorium according to my own ideas and methods, correcting such errors as seemed to me to exist in other institutions, and when the opportunity presented itself I lost no time in taking advantage of it.

I consulted several physicians before looking for a location and laid my plans before them. They gave me every encouragement, and stated that our community was in need of an institution where all practitioners could treat their own cases. They further advised me to get as large a building as possible, located in a quiet part of the city, where there was an abundance of fresh air. These same physicians invited me to call on them at any time if they could be of further assistance to me, which I have frequently done; in fact, I have found the physicians in general big-hearted men, willing to give every assistance and advice in the work I have undertaken.

With this encouragement I set out and located a building. It was not such a building as I liked, but answered the purpose very well, being a three-story structure, with ten large rooms finished, the top story and basement unfinished, both of which can be put in condition to be of valuable use. I was unable to get the landlord to put the house in proper shape for occupancy, but secured a lease for five years, with the understanding that I was to make the necessary improvements and pay a rental of $50 per month.

I began work at once, painting and kalsomining, and as soon as I had three or four rooms completed, besides a reception room, dining room, kitchen, office, etc., I received several patients, which was encouraging, and better progress was made in the work, it being continued until I had sufficient room to care for ten patients. As I had considerable time, and being able to do most of the work myself, I saved a good deal of money in making such improvements, the material being about the only item on which I had to figure.

It has always been my plan to make everything convenient, so that the work could be done with as little extra help as possible. The kitchen was the first place I started to work. It was kalsomined and painted white, which makes it cheerful and comfortable. The kitchen treasure has had an extension built on large enough to accommodate all the supplies that can be kept near the stove. Shelves and cabinets have been constructed for the patients' dishes and utensils, which are kept separate from the others. A tray rack was made on rollers to hold eight trays, all numbered to correspond with the rooms where the meals are served. This rack can be moved about the kitchen, and is particularly convenient for serving and cleaning up the trays. When the trays have been prepared, small hand racks are used which are large enough to hold three trays each. One man can carry two of these racks, or five or six trays, at one trip. It requires one to be careful in carrying the trays, but saves time and accidents.

The ice box and groceries are kept in a small room just off from the kitchen. All groceries are delivered the day before they are used, except such as cannot be kept over. By this method the cook has no cause to leave the kitchen; she has plenty of time to do her work and several hours each day for rest. The cuisine has always been good, the meals served on time, and little difficulty has been experienced in this department.

We have a large reception room 18x20 feet, where all the patients assemble. A piano is used to entertain them, as well as all kinds of parlor games. The music plays a prominent part in the treatment, and daily concerts are given. We believe the occupational method is of great value to the speedy recovery of patients, and especially is this true with the mental patients, which class we have particularly equipped ourselves to handle. A study is made of each case, and the patient interested by employing some method to keep his mind off himself and his peculiar delusions, whatever they may be. Our method of exercising is regulated according to their strength and former habits of life; they take great enjoyment in croquet, quoits, medicine and base ball exercises. A gymnasium has recently been equipped in which is installed only selected apparatus best suited for all patients. I find this to be a very valuable asset and a splendid means of furnishing employment and exercise of mind and body.

We had one German last spring who was interested in studying English, and he spent several hours each day studying, requiring very little assistance. Quite a number of the younger patients amuse themselves in practicing penmanship and reviewing their school work. We lose

no time in getting material for these people when we see they can be interested. I have a small law library composed of the Oregon code and text books on all the common subjects, which is of great interest to the men. The women spend much of their time in reading, needlework, and playing games.

Some of our rooms are especially equipped for delusional and melancholia patients. We take every precaution to prevent the slightest injury to them. The rooms are furnished homelike, and the surroundings made as cheerful as possible. We endeavor to keep the patients out of their rooms during the day, and at no time allow them to be left alone.

Fig. 1. Dwelling house made into a sanatorium.

There are two points which are of particular interest to me—the care of the patients and the administrative cost. In the former we spare no expense or labor to see that the patients are taken care of properly. We find it very important that they should be treated with utmost kindness at all times in order to gain their confidence and maintain proper control. No restraints are used, baths and hygienic methods being substituted. Physicians who have placed patients in our care have given us great encouragement on the ethical attention given them. The secret of our success is the performing of our duty toward patient and physician in charge. We have our first case to leave us dissatisfied. My wife and I both being nurses, we personally see to the care of the patients.

As to the administrative cost, I give below some figures which are about as near correct as I can give at this time. I figure my whole expense on a sliding basis. By this method I can figure ahead at least thirty days and know just exactly what my expenses will be. If a greater number of patients are received during the current month, or a less number, I am able to raise or lower my expenses, payments, and improvements for the next month, as I see fit. During the eighteen months of operation I have found this plan to be advantageous, and I have had no cause to worry as to how I was to meet the expenses.

For convenience, I have divided my expense account into two classes—general expense account and special expense account. The former covers all expenses except that of the patients, which is figured separately under the latter account:

GENERAL EXPENSE ACCOUNT

	Per month.
Help	$ 60.00
Electric light	2.75
Ice (5 months)	2.40
Fuel	11.50
Laundry	12.00
Rent	50.00
Stationery, printing, etc	16.00
Telephone	3.50
Water	1.50
Groceries	40.00
Miscellaneous	15.00
Total	$214.65

SPECIAL EXPENSE ACCOUNT

	Per month.
Mental patients	$ 20.00
Alcoholic cases	25.00
Drug cases	40.00

I find it necessary to employ a cook and one attendant, whom I pay $30 per month each and expenses for the first four patients, increasing $5 per month for each additional patient as they come in until it is necessary to employ extra help. At this rate the employees can make about $50 per month. They are well paid for the amount of work they do, and are willing to do the work as it increases for the extra compensation; besides, it makes it more convenient for me to pay higher wages as my business increases.

Fig. 2. Cozy sanatorium lounging room.

The only place I try to save on the grocery bill is in buying and preventing waste. It is my desire to make the cuisine the very best, and we see to it that all trays are sent to the patients in first-class condition. We endeavor to ascertain as far as possible what dishes are most pleasing to the patients, and try to satisfy them in this respect,

due regard being had to proper diet for each individual case; it costs but little more, and we are well repaid for the trouble. We do not send the patients all they will eat, but an amount we think they should have, serving the food according to its caloric values and requirements of the patient. Great harm is often done in allowing them to overeat, and especially is this true when they are confined in bed or unable to take even the milder forms of exercise.

At the proper season we make preparations for canning all our supply of fruit. Last summer over 400 quarts of fruit and 100 glasses of jelly were put up. The cost of this fruit per quart will average about 12 cents, including jars and sugar, which is less than one-half the price we have to pay for it during the winter months. Provisions are also being made to put in a supply of groceries, which will be a saving over the present plan of buying from day to day.

ASSOCIATED OUT-PATIENT CLINICS OF NEW YORK CITY

First Attempts to Standardize Technical Care of Patients in Dispensaries Won Active Interest of the New York Academy of Medicine—Results—Some Excellent Preliminary Work, and Some Tentative Standards

By E. H. LEWINSKI-CORWIN, Ph. D., Executive Secretary.

MANY attempts have been made in the past to ameliorate the conditions prevailing in dispensaries and out-patient departments of hospitals. The attempts have invariably come from the members of the medical profession who naturally were in close touch with the dispensaries, and who were anxious to see an improvement in administration of this much-neglected branch of organized medical service. Their attempts were almost always futile for many reasons. First, there was no concentration of action; second, there was no distinct program; third, there was no comprehensive knowledge of conditions; fourth, there were no standards by which efficient work could be judged; and fifth, the responsibility for the conditions has not rested with the medical profession.

At the end of the year 1912 the Public Health Committee of the New York Academy of Medicine revived the dispensary problem and decided to attack it from the inside, so to speak; that is, to interest the boards of managers of the dispensaries in devising ways and means for improving the conditions.

As a consequence, an organization of representatives of the boards of managers of the dispensaries and hospitals was formed, and constructive work begun. The general aims and purposes of the Associated Out-patient Clinics have been set forth as follows:

1. The coordination of the work of existing dispensaries and out-patient clinics.
2. The elimination of unworthy applicants for treatment.
3. The promotion of proper standards of treatment.
4. The promotion of economy and efficiency in dispensary management.

One of the first matters that suggested itself with reference to the coordination of the work in dispensaries and the elimination of unworthy applicants was the division of the city into dispensary districts. This device has not been adopted for various reasons, the main one being the present distribution of the dispensaries and the special character of some of them; then there were the interests of the physicians to be considered; and finally the interests of the patients. It was found that in some sections of the city three or four dispensaries were situated in very close proximity to each other. The districts assigned to such dispensaries would necessarily have to be at great distances from those clinics.

The physicians in clinics connected with teaching institutions objected to a districting of the city on the ground that they ought not to be restricted in their supply of clinical material. The problem was further complicated by the existence of special clinics, to which districts could not be assigned. Moreover, it was pointed out that the patients who applied for charity ought not be restricted to a physician who, in their judgment, no matter how erroneous, was not helping them, or who, for various reasons, might not be sympathetic or responsive. As a substitute for this device it was recommended that the principle of limitation of numbers be adopted, such limitation to be based on the facilities in men and equipment of each clinic. This principle of limitation has been adopted and heartily endorsed by the Association.

From the very outset the Association has encountered a number of problems which required specialized medical opinion and which a committee composed of lay and medical men could not very well undertake to solve. Accordingly it was suggested that auxiliary organizations be formed,

composed of chiefs of clinics of the various divisions of the dispensaries, those auxiliary organizations to act as advisory bodies.

The first matter which made the need of such advisory committees evident was the question of proper operative handling of tonsil and adenoid cases. The executive committee could not, independently, reach an authoritative opinion on the matter, and so submitted it to the section on laryngology and rhinology of the New York Academy of Medicine. The section took a great deal of interest in the matter and presented a report based on opinions of the members of the section, expressing preference for tonsillectomies rather than for tonsillotomies, and stating that both kinds of operations require the facilities of a hospital and should not be performed in dispensaries, particularly in those which have no recovery rooms where patients may be kept under observation for several hours. The authoritative advice given by the section on laryngology and rhinology of the Academy of Medicine suggested to the committee the desirability of permanent advisory bodies of the kind to whom various matters requiring expert technical opinion could be submitted as they arose. The first section organized was that of venereal diseases, of which Dr. Edward L. Keyes, Jr., became chairman. Immediately upon its organization the section undertook a very thorough analysis of the problems involved in administration of clinics for the treatment of skin and venereal and genito-urinary diseases, and prepared a set of standards for the proper and efficient administration of these departments of dispensaries. It has also prepared forms of history cards and instructions to patients. The main recommendations of the section were:

First: That the treatment of syphilis, whatever its manifestations, should be conducted in one department, which shall be either a special department of syphilis or the dermatological department.

Second: That intravenous medication may be administered in clinics to suitable cases of syphilis, and that such medication be given free to those who are unable to pay for it.

Third: That whenever the nature of the lesion, such as eye, throat, viscera, etc., has directed the patient to a department other than that of syphilography, the treatment should be conducted jointly by the two departments, but that anti-syphilitic treatment be administered in departments of syphilis or dermatology.

Fourth: That every department for the treatment of syphilis should be provided with a dark-field microscope and facilities for making the Wassermann reaction test.

Fifth: That suitable circulars of instruction be given to every syphilitic patient at the dispensaries, and that uniform forms of records be employed in all of the clinics treating syphilis.

With regard to the department for the treatment of gonorrhea and chancroid, the section recommended that those departments be provided with facilities for sterilization, microscopic observation, as well as with facilities for endoscopic and cystoscopic work.

Realizing that not all of the dispensaries will be able to provide the necessary laboratory facilities for making the Wassermann reaction test as well as the complement fixation test, the section recommended that in such cases where laboratory facilities are not available at the clinic, provision should be made for the prompt conveyance of the specimens to the department of health of other places at which the examinations are made. The section has not only recommended uniform record cards and instructions to patients, but has actually prepared such forms of records for the department of syphilis as well as the departments of gonorrhea and chancroid.

Very closely allied to the genito-urinary departments are the departments on gynecology. Consequently, the next section organized was that on gynecological clinics with Dr. Frank R. Oastler as chairman. This section, similarly to the preceding one, has formulated a set of recommendations which, in their opinion, are essential to satisfactory therapeutic work in those clinics. After having expressed its opinion that local gynecological treatment is of undoubted value, and having stated what constitutes indispensable proper equipment in such clinics, the section recommended that gonorrhea in women should be treated in the department of gynecology, but that syphilitic patients be referred to the department of dermatology or syphilography. The section also recommended that children suffering from vaginitis should be treated in the gynecological departments of dispensaries or in special departments for the treatment of the disease, if such are available. Also, evening gynecological clinics should be maintained for the benefit of patients working during the day. In harmony with the general recommendation of the whole Association and the section on genito-urinary and syphilitic clinics, the gynecological section also recommended that the number of patients admitted to the clinic should be limited in accordance with the facilities in men and equipment of each clinic. As a general rule in gynecological clinics they recommended that an average of six patients, old and new, per table per hour, be adopted. The section has also prepared a standard gynecological history card and instructions to patients suffering from gonorrhea and also from cancer of the womb. The section recommended that the latter card of instructions be given to every woman patient in the gynecological clinic without any reference to the

ailment from which she is suffering at the time she applies at the clinic.

The ready and helpful assistance given by the sections on genito-urinary clinics and gynecological clinics has led the Association to organize additional sections. Accordingly, sections on pediatric clinics with Dr. Mathias Nicoll, Jr., as chairman; internal medical clinics with Dr. Hubert Vivian Guile as chairman, and surgical clinics with Dr. Alfred Jerome Brown as chairman, have been organized. Every one of the sections has spared no effort in devising standards by which effective medical work could be accurately gauged and attempts at proper organization guided.

The report of the pediatric section has been divided into three parts, each part dealing with standards for different types of children's clinics. The section realized that many institutions could not adopt recommendations which would involve expenditures not within their power of realization. They have accordingly suggested three sets of standards, the lowest of which, however, does not preclude efficient work. They have also recommended that dispensaries falling below "Class C" be discouraged from continuing their work.

The section on internal medicine divided its recommendations into two parts, the first dealing with conditions necessary for efficient work and formulating standards considered indispensable; and the second part containing suggestions for the further improvement of the work of medical clinics. The first part deals with such matters as the physical examination of patients, keeping of histories, laboratory facilities, and recommends the limitation of the number of patients so that each new case may receive twenty minutes and each return case six minutes of the physician's time. When a trained attendant is constantly present to get cases ready, to take temperatures and weights and to obtain and examine specimens, the time for each new case may be reduced to thirteen minutes for new cases and to four minutes for return cases. The second part of the recommendations deals extensively with social service—its proper functions and methods of work—and also with the equipment of a properly organized medical clinic and with the relations of out-patient departments to the physicians.

The recommendations of the section on surgical clinics are divided into four parts. The first deals with the equipment of a surgical clinic; the second deals with the kinds of patients to be treated in a surgical out-patient department, and considers in detail such matters as anesthesia, fractures and operative cases; the third is devoted to social service and visiting nursing; and the fourth treats the subject of a history system.

The committee on out-patient work of the American Hospital Association has undertaken various measures for stimulating dispensaries throughout the country and has issued recommendations chiefly of an administrative nature, affecting organizations and standards of service; but thus far has issued no detailed standards of clinical technic.

The reports of the several sections of the Associated Out-patient Clinics of New York City, as above outlined, represent the first public attempts in this country to formulate such standards. We realize that they are tentative in character.

In addition to the problem of clinic standards, the Association has devoted a great deal of thought and attention to other matters concerning out-patient departments, chiefly administrative problems. Examples of these are:

The proper handling of whooping cough cases.
The need of evening eye clinics.
Occupational diseases.
Dispensary accounting.
Dispensary records and statistical reports.
Standardization of departments of pharmacy.

The Association feels that one of its main functions, in addition to the standardization of the work of the out-patient departments, is the stimulation of interest among the lay and medical public in order to supply the dispensaries with funds sufficient to bring into actual practice the recommendations so carefully prepared by the Association, and to make the out-patient departments and dispensaries institutions which will attract able and conscientious physicians and which will afford means for effective medical treatment, as well as for prevention of disease and those concomitant disastrous social and economic consequences which follow ill health.

"Baby Consultations" at Edinburgh Royal Maternity

The directors of the Edinburgh Royal Maternity and Simpson Memorial Hospital are making efforts to establish a more intimate form of cooperation between the "U" of Edinburgh and the hospital. About 2,000 confinements a year are attended in connection with the institution, and several hundreds more through the five dispensaries associated with it. This question of systematizing the supervision of infants for some months or perhaps a year after birth is also engaging the attention of the directors and the medical board.

Mayor Curley, of Boston, has recommended to the trustees of the Boston City Hospital that arrangements be made for Dr. Frank B. Mallory, of the Harvard Medical School, for eighteen years pathologist at the hospital, to devote all of his time in research work toward the discovery of a scarlet fever antitoxin. According to Mayor Curley there is an average of 250 scarlet fever cases a week in Boston, representing an expense to the city of $67,500 a year.

Fig. 1. Ohio Valley General Hospital, Wheeling, West Virginia. View from the north.

ENTHUSIASM THAT BUILT A SPLENDID HOSPITAL[1]

Large Men With Large Ideas Were Necessary to Create the Ohio Valley General Hospital —A Vision That Grew Ten-Fold Under Impulse of Enthusiasm

By PLINY O. CLARK, Superintendent, Ohio Valley General Hospital, Wheeling, West Virginia

ONCE upon a day I heard an oration by a high school graduate setting forth the fact that "Enthusiasm Moves the World." I liked the subject then; I like it still; although the title might now be modified to "Enthusiasm, when rightly directed, is a mighty force in any undertaking." Certain it is that, given the need for a new or a greater or broader hospital, given a public aware of the real needs of such an institution, if enthusiasm is let loose upon the problem from wisely directed sources, that community is almost certain to have its ambitions realized. If you are skeptical, analyze some of the recent successes and failures along this line.

There is much to be gained by many a struggling hospital in a wisely directed "whirlwind campaign"; and it is to inoculate some of these with the germ of enthusiasm that this unpretentious story is written.

Wheeling had had its hospital managed by the Sisters of St. Joseph for some years, as well as its smaller private institutions, when the City Hospital was founded in compliance with a public demand for larger facilities. For this undertaking a stock company was organized to manage a small institution, housed in an unused female seminary building. After fifteen years of successful work, the board of directors were waited upon by representatives of the visiting staff, with a proposal that $80,000 be expended upon a new wing. The board considered the plan absurd, visionary; they needed educating. Three years later, when the old building began to literally "fall down," this same board met to consider the *necessity* of a new building. At first it was proposed that $90,000 be raised for it, but after a careful analysis of the needs this sum was seen to be entirely inadequate and $250,000 was fixed as the goal.

An expert on hospital architecture was employed to draft preliminary plans; a campaign manager was engaged and put on the job; a new superintendent had been busy for five or six months. Things began to hum; the germ of enthusiasm was "taking." Committees were formed, as many as necessary to get the leaders definitely interested; "headquarters" were set up in a vacant bank building, from which the manager directed the real workers. As chairmen of the various committees the most influential men and women were obtained and the cause was thus given a big boost.

A dinner with three hundred present was the opening gun of a ten-day sprint, which ended with $262,000 pledged for a new building and $10,000 more pledged to the endowment fund. Young men, old men, men in busy mercantile life, attor-

[1]Editor's Note: Since this paper was written, another campaign has brought in an additional sum of more than $257,000.

neys big and little, ladies of society and young women, all had joined with enthusiasm and won the victory.

This victory had been made possible because of five things; a board of directors thoroughly convinced of the necessity of a larger hospital, and hence liberal givers themselves to the cause; a public knowing fairly well the needs of such a hospital; a competent campaign manager; a goal of large enough proportions to stir the interest of the big givers; and an enthusiastic corps of supporters.

Fig. 2. Ohio Valley General Hospital. Children's ward. Note figured frieze around wall.

This campaign showed that big men and women like big issues when convinced of their "bigness," and that they will support a big proposition much more willingly than they will support a small one in which the end to be gained is insignificant. This, of course, is not to be taken to mean that every community needs a large hospital, say of three hundred beds; but it is better to build for the future and have a plant more than adequate for present needs than to be cramped from the first; in other words, build what will be "large" for your community and the large people will rally to the support of such a project.

Fig. 3. Ohio Valley General Hospital. One of the verandas, showing their popularity.

And, still speaking in a "large" way, you must have large men and women on your boards if your "large" plan is to succeed; for they are the ones who will sympathize with the advance movement along all lines, not those narrow-minded individuals who see in a position upon the board only an opportunity for self-advertisement or personal gain through the turning of hospital business their way, or who have some pet theory to try out.

A word about Wheeling: It is a city of 42,000 population, but claims suburbs which make the real total 125,000. It is a manufacturing town in the midst of rich coal and oil fields. It is noted for its hospitality and practical philanthropy; it has donated over $1,000,000 to public improvements during the last five years.

Did we erect our building for the original sum with which it was proposed to erect it? No, indeed. More than twice the original sum was expended, leaving us with a good-sized debt, looked at commercially; but when our assets—the loyalty of a thriving community and increasing favor with the surrounding territory, as well as a successful plant—are considered, we think the debt small; and there is already a movement on foot to clear it off. This debt was carefully considered and judiciously entered into, the thought being that it was better to anticipate future needs with an adequate plant than, as before, to be hampered by a lack of facilities.

But regarding the new building itself: it cost, with power house and all equipment complete (except that for hydro-therapeutic, electro-therapeutic and out-patient departments) $3,090.00 per bed for a present capacity of 155 beds, 80 private rooms and 75 ward beds. Without the $95,000 item for the power house, the whole would have been almost a record in economical expenditure for a strictly fireproof building. The cause of the large expense in the power house was the site; the building was set into the side of the hill upon a sandstone ledge, thus requiring a large excavation.

The building architecturally is well adapted to its needs; it is of the bold medieval fortress type, rising to a height of six stories in the main part, and looms dominantly against a small West Virginia mountain for background. Watching over the city and the whole Ohio River valley for miles,

it is, in the words of its designer and architect, "a fortress against man's most dreaded foe, disease." It is built on the block plan, the shape of a horse-shoe.

Every step in the erection of this building has been carefully considered by a board of men of large vision; hence there was employed as architect, not a local man who had had little, if any, hospital experience, but one who knew intimately all the requirements of a hospital, both from the side of the administrator and the physician, not forgetting the nurses. Another indication of this largeness of vision was the selection of the best of everything in the equipment.

To mention some of the things incorporated in the building, we would name: battleship linoleum floors throughout, except in kitchens, lavatories, operating suites, etc.; refrigeration by carbon-dioxide-brine circulation; filtration of all water; and, for sterile purposes and for drinking, distillation of water in the seventh story with tin-lined pipes to carry it to the points of distribution. The drinking water is also refrigerated, and the fountains are so well distributed that each patient has a fresh supply easily accessible. Other features are, hot and cold running water, telephone, eye-comfort system of lighting, and silent call signal system in each room. Each ward patient is provided with a portable bedside light which also serves as a drop light.

Every labor-saving device known and approved is installed; this is especially noticeable in the main kitchen on the first floor, where not only the food is cooked "hot," but the serving devices are so arranged that the patients are served "hot" food; in this process two automatic food lifts figure largely and hasten the work. "Eight minutes from kitchen range to patient's mouth" is the slogan; and this in the face of the fact that each patient on full diet is served a-la-carte.

A central vacuum cleaning system; ice cream without ice; an ingenious arrangement of head nurse's station on each floor; a complete system of ventilation; heating by exhaust steam; consuming of all refuse in an incinerator in each service room, and an abundance of airing balconies, complete the list of more important items of interest.

Fig. 4. Ohio Valley General Hospital. Main kitchen.

If you are still skeptical about the power of enthusiasm applied to hospital work, the best cure would be to visit the hospital. You will be warmly welcomed.

CANAL ZONE HEALTH WORKERS TO MEET

Dr. Summersgill Arranging Convention and Banquet in San Francisco for Panama Canal Physicians

During the coming convention of the American Hospital Association and the American Medical Association in San Francisco there will be a gathering of physicians who have been and who are now connected with the medical department of the Isthmian Canal Commission.

Plans for the convention were outlined at a meeting of the Medical Association of the Canal Zone held in San Francisco February 20, and the arrangements were placed in the hands of Dr. H. T. Summersgill, Superintendent of the University of California Hospital. He requests that those intending to attend the convention at that time, and who are eligible to attend the dinner, communicate with him as soon as possible, stating the time which will be most convenient for them to attend such a meeting.

The Hosmer Hospital, of Dyersburg, Tenn., recently celebrated the first anniversary of the opening of the institution. Three hundred patients were cared for during the year. Two hundred and twenty-five of these were surgical cases. Twenty-nine patients were treated free, and thirty-five at the expense of the county, charitable organizations, the city of Dyersburg and benevolent individuals. There were twenty-five deaths, fourteen resulting from operations, including emergency cases.

CARE OF INDUSTRIAL ACCIDENTS IN CLINIC AND HOSPITAL[1]

The Term "Minor Surgery" a Misnomer and Sometimes Leads to Neglect—The Patient as Well as the Hurt Must Be Treated—Some Suggestions for Conduct of the Industrial Clinic

By WM. H. LIPMAN, M. D.,
MEDICAL DIRECTOR FOR SWIFT & COMPANY, CHICAGO

THE purpose of this paper is to point out briefly some of the lessons learned and to emphasize a few of the cardinal principles that have suggested themselves during the nine years of the writer's connection with the medical work of the Chicago plant of Swift & Company, from 1905 to the present year, inclusive.

It is not intended that these lessons should serve as proof of superior knowledge or ability of the Chicago staff. They are offered for your consideration because they are the fruit of superior numbers.

During the period mentioned approximately 50,000 accidental injuries from various sources were treated at our office. The experience thus gained permits us, we believe, to speak, if not with authority, at least with confidence.

In all these cases not one life was lost through infection, nor was one single limb sacrificed because of having become infected while under our care. In fact, the number of cases that became infected under our treatment was so small and of such trifling character that they need not be considered.

The cases treated include a large number of wounds usually considered prone to develop lockjaw, yet not one case of that disease has occurred in our hands.

Such results you will agree are gratifying, but they are not cited with a view of establishing a personal triumph—they are related merely to draw your attention to the subject-matter of this paper. Had our efforts been less successful, we surely would have fallen far short of the task entrusted to us.

The bulk of our work is of the kind usually classified as "minor surgery." I believe that to be an unfortunate term, because it leads to the neglect of disturbances that are exceedingly important.

You undoubtedly remember how little time is devoted in the medical school to the study of the treatment of wounds or the repair of tendons, for example, as compared with the time given over to the study of major operations, so-called. You know how little space is allotted even in the most extensive text-books on surgery to the treatment of burns or infections, as compared with the space taken up by the description of operations on the organs of the abdomen or chest. Of course, faulty technic in an operation on these organs may be followed by more immediate dire results than faulty technic in the treatment of wounds or operations on the hand, but in the end the results of the latter may be equally serious. It is just as vital to know the proper operation for the repair of severed tendons as it is to know the proper operation for appendicitis, and each requires skill and care.

It is just as vital to prevent general infection in the treatment of even a slight wound as it is to prevent peritonitis in an abdominal operation.

It is more important to be able to find and remove a foreign body from the eye and prevent subsequent infection than to know the technic for the removal of the eye-ball.

It is more important to know how to treat extensive burns of the hands and face so as to prevent extensive scarring with resulting deformity and loss of function than to know how to operate for the removal of the scar after it has formed.

These comparisons are given simply to illustrate the importance of what is wrongly termed "minor surgery."

One of the reasons why it is looked upon lightly by the laity and by a certain part of the medical profession is the fact that accidents are so common, which leads to the belief that most of them need no attention. It is true that many of them would get well without medical aid, but it is the uncertainty as to which of them will and which of them will not that makes the subject worthy of serious attention.

It has been said that the result of an accident depends on who gets the injured person first, and no greater truth has ever been uttered in connection with a medical subject. Not only is a thorough knowledge of medical and surgical fundamentals necessary to the successful treatment of accidental injuries, but the degree of success depends upon the acquired skill of the surgeon. Skill can only be acquired by thorough application and the study of the cases and their problems. Professer Osler has said that more mistakes are made in medicine by not looking than by not knowing. Thoroughness in diagnosis and treatment is the

[1]Address before the Conference of Employees' Physicians of the Swift Industrial Plants.

one prime factor in the development of the specialist, and our work is in a sense a specialty.

That the value of this kind of work is recognized is shown by the fact that more and more of the larger industrial and commercial establishments are installing plant surgeons. Proof that the medical profession is beginning to give minor surgery the place it deserves among the surgical specialties is offered by the appearance of several excellent text-books devoted entirely to that subject, notably the work of Dr. Foot, of Columbia University, and the classic treatise on hand infections by Dr. A. B. Kanavel, of Northwestern University. Another encouraging sign is to be seen in the increasing frequency with which the term "industrial surgery" is used in surgical literature in place of "minor surgery."

Josh Billings once said that the trouble with doctors is that they treat the disease and forget the patient. That such is the case with many doctors cannot be denied; neither can it be denied that therein lies the cause of failure of many otherwise capable practitioners.

It may be true that the easiest way to reach a man's heart is through his stomach, but the easiest way to reach a man's or a woman's ills, aches and hurts, is through the mind. When you have dressed a patient's wound and stop there, you have accomplished half your task—you have only treated half the man. You must put his mind at rest, at ease. You must relieve the tension and anxiety under which it labors as a result of injury to the body. The psychologic side forms an important part of modern treatment, but it is of very special importance in the hands of the "company surgeon."

The medical man of a large corporation labors under certain disadvantages which he must overcome if he is to fulfil his duties to the corporation and its employees. He is looked upon with suspicion by many of the men, and his ability is doubted. This is simply a manifestation of the prejudice that has been engendered in the mind of the public against all large industrial and commercial organizations by various kinds of agitation, the sources of which need not be considered here. This prejudice is slowly but surely disappearing, but enough of it is alive to make the task of the "company doctor" a difficult one. He comes in intimate contact with more of the company's employees than any one of its officers, managers or superintendents. They come to him for aid in bodily injury, and if that aid is not given cheerfully, promptly, and gently, the surgeon is apt to add injury of the mind to that of the body.

Ineffective and incorrect methods in the actual treatment of injuries may unfortunately produce untoward results to the employee, and, indirectly, financial loss to the company; but an improper attitude on the part of the surgeon toward the mind of the patient may result in a loss to the company far too great to be measured in dollars and cents.

In order that we may carry an injury to a successful issue to all concerned, it is of course desirable that the patient remain under our treatment as long as necessary, and it is with that object in view that the psychologic element of our work must be utilized. But we must not seek to produce a psychic influence through fear, pity or misrepresentation; our aim must be to create a healthy mental response by means of sympathy, encouragement, truthfulness and, above all, gentleness. Gentleness is a duty you owe your patient as a medical man. It is the key to his confidence *in* you as well as respect *for* you, and it is your duty to the company to win both. Gentleness can be expressed by hand, by word and by manner, but it must not be carried to a degree where it becomes evidence of weakness or lack of self-reliance—it must be at once dignified and assertive.

There are many tricks of the trade, at times neglected through thoughtlessness, and seemingly unimportant in themselves, but which are effective and important when used with discretion by the surgeon. For example: cleaning of both hands of a patient before he leaves the office when injury to one prevents him from cleaning the other hand himself; a comfortable sling in injuries to the hand or arm; thorough removal of all bloodstains from the patient's clothes and dressings before he is sent away; prompt notification of his family or friends when he is sent to a hospital; furnishing a vehicle when walking is difficult; instruction as to how to manage his injury at home with comfort, especially at night; allowing him to rest in the office after an exhausting dressing; strict adherence to all promises made to him; and there are many more little things too numerous to mention. In a word, let him see that the company is not sparing expense, and that the surgeon is using his best efforts towards promoting his comfort, well-being and speedy recovery.

At times we meet men who seem to misunderstand and misuse well-meant efforts of the company and surgeon, and they are inclined to exaggerate their complaints. In such cases we must exercise careful and impartial judgment before rendering our opinion, but when flagrant and deliberate misrepresentation is discovered it must be dealt with forcefully.

As a whole, I believe I express the sentiment of Swift & Company when I say, always give the injured employee the benefit of the doubt. When

an employee appeals to us for adjustment of whatever financial claims he may have as a result of injury, we must explain to him that our function ends with the medical side of the case, but that we will direct him to the proper department where his claim will be promptly attended to.

Among the many responsibilities of our work none is so weighty as the one we assume when we must decide on the course to be taken with a severely injured hand or one or more fingers or parts. We must decide whether or not amputation in whole or in part is justified. It is a grave responsibility and calls for cool and deliberate judgment. Our experience has taught us that nature will do wonders, and will restore fingers to good function that seem hopelessly mutilated, if we only give it a chance under careful and intelligent care. Our rule is, "it is never too late to take a finger off, but once off it cannot be placed on again," and we have met with some pleasant surprises by a strict adherence to that rule.

It is true that in some cases the finger or hand will be more or less deformed after recovery. That, however, is a secondary consideration. The average working-man cares little how his finger will look after injury, as long as it will be of some use to him.

When a part of a finger has been removed by the injury, we are often tempted to trim or even shorten it, so as to be able to do a neat job. Here again, we must remember that our patient needs every atom of his finger and that nature is our best ally and will reward us with good results if we are careful. Of course you will always have the ready consent of your patient to save everything possible for him, and when you have restored his members to usefulness you will gain his everlasting gratitude and you will have directly and indirectly protected the interests of the company.

Another delicate question we are at times confronted with is whether the hospital or home is the proper place in a certain case. You all know how reluctantly most people enter hospitals in either sickness or accident, especially the latter. Some have an absolute horror of them and will take desperate chances at home rather than go to a hospital. The first thing to be considered in this question is the safety of the patient. In all cases involving injury to a vital part, or although the injury is of a nature not immediately dangerous but may become so, the proper place is the hospital. On the other hand, when you are reasonably sure that no complications will arise, the patient can be treated at home.

As a rule, injuries to the upper extremity rarely require hospital care except when they are very extensive, or in certain fractures of the upper arm. Injuries to one or more fingers never need be sent to hospitals, even amputation or tendon operations—they can be performed under local anesthesia in the office. The same is true of the ordinary injuries to a foot or hand. Fractures of the lower extremity requiring reducing and fixation apparatus had better be taken to a hospital, at least for some time. Wounds or other injuries to the soft parts of the extremities, or those of the trunk not involving vital organs, can be treated at home. The same is true of infection without systemic symptoms. One element always to be considered in deciding on the proper place for treatment is the fact that indiscriminate placing of cases in hospital magnifies the severity of the injury and causes the patient unnecessary worry and the company needless expense.

Of the many great discoveries of the latter part of the nineteenth century the x-ray has been among the greatest. It has opened up new fields and possibilities to surgery. Like all great benefits to mankind, however, the x-ray has its drawbacks, the most dangerous one from the standpoint of its diagnostic value being the fact that the surgeon is apt to acquire the habit of relying exclusively on the x-ray for diagnosis, to the neglect of all other methods and signs. It is to be used in conjunction with all other methods, especially after they have failed to enable us to arrive at a positive diagnosis. Whenever there is the slightest doubt in a case of fracture of an important bone it should by all means be used. It is very rarely necessary to employ it in injuries to fingers or toes and the ordinary injuries of the hands or feet.

The frequency of after-dressings is quite an important item and often requires keen discrimination. Of course the important guide is the nature and condition of the case. As a rule, it is best to make the mistake of too frequent rather than too rare dressing of wounds, providing, of course, the progress is not hindered thereby; and that applies to home as well as office cases. We are in the habit of dressing wounds of all our patients that are at work daily, and in the case of some of them twice daily, especially those employed in departments such as the boiler shop, killing floor, etc., where the dressings soon become soiled on the outside. A second fresh dressing just before going home is appreciated by the men.

Dr. Henry S. Noble, who has been superintendent of the Connecticut State Hospital at Middletown for the last fourteen years, died at Waterbury in March. Dr. Noble was seventy years of age and had made a study of insanity for forty years. He was a graduate of Tufts College and the College of Physicians and Surgeons in New York.

THE GRABFELDER MEDICAL BUILDING

New Administrative Unit for the National Jewish Hospital for Consumptives, Denver

The National Jewish Hospital for Consumptives has just occupied its new medical administration building, which has been recently completed and thoroughly equipped with every convenience for the diagnosis and treatment of tubercular patients.

Fig. 1. Grabfelder Medical Administration Building, National Jewish Hospital for Consumptives.

This building was the generous gift of the hospital's president, Mr. Samuel Grabfelder, of Philadelphia, Pa. The building occupies a prominent corner on one of the main thoroughfares of the city of Denver and consolidates all of the medical work of the institution. It has an x-ray equipment, complete in every detail, providing every facility for x-ray work, arranged to economize space and labor. The building also contains properly arranged examination rooms, thoroughly modern, up-to-date nose and throat rooms, dental room, proctologic room, and every convenience in a splendidly equipped laboratory for clinical and research work, together with a room of ample proportions on the third floor of the building for the housing of all the animals necessary for diagnostic and research work.

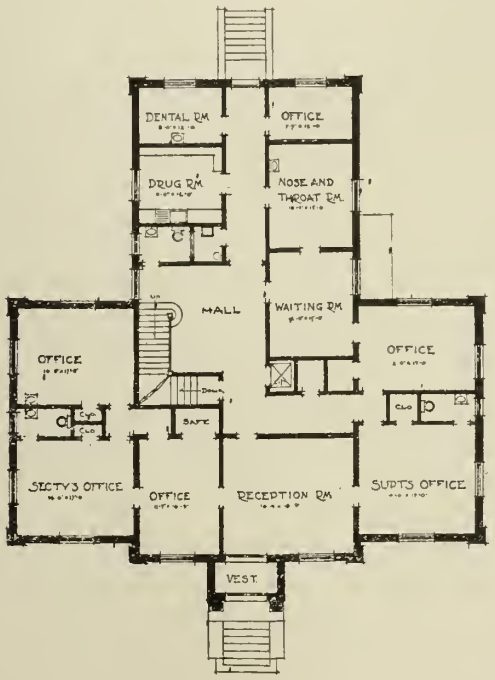

Fig. 2. Grabfelder Medical Administration Building. First floor plan.

Large and comfortable rooms are provided for the administrative offices and one wing of the building is devoted to the quarters for the house physicians.

Fig. 3. Grabfelder Medical Administration Building. Second floor plan.

Missouri Legislature Passes County Hospital Law

Missouri now has a law under which the qualified voters of any county may compel the establishment of a county tuberculosis hospital, such a law having been passed by the recently adjourned state legislature. The law provides that on the presentation to the county court of a petition for the establishment of a hospital, signed by five percent of those who voted for the candidate for governor at the last election, the court must call an election on the question of the issuance of non-taxable bonds to the amount of the sum recommended in the petition. If the voters approve of the bond issue it then becomes the duty of the county court to appoint a board of five commissioners to have charge of the selection and equipment of the building and to administer all of the business affairs of the hospital, including the appointment of the superintendent. Not fewer than two of the commissioners shall be women and not fewer than two shall be men, and it is further provided that they shall be known for their intelligence, business qualifications and integrity, and shall be specially interested in the purpose of the hospital, either because of scientific knowledge in the prevention of tuberculosis or of their beneficent attitude toward those afflicted with the disease. The state will pay $5.00 a week toward the support of all charity patients, and the commissioners will be allowed to receive for the hospital any gift of money or other personal property which can be used or can be turned into money or real estate.

Charité Hospital (Berlin)

Army surgeons alone receive internships at the Charité. In return for this special privilege granted prospective military surgeons, the Charité was loaned to the university as an academic hospital. The state provides a home in the Kaiser Wilhelm's Akademie for these favored ones during their student period.

The MODERN HOSPITAL

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OTHER IMPORTANT INFORMATION ON PAGE 34, ADVERTISING SECTION

Team Work

There are more kinds of team work in the hospital than those employed in the mere management of the institution. We have on other occasions discussed cooperation between the trustees, the medical staff, the superintendent and the various department heads, to create a smooth running, economical and efficient machine.

But there are, imerging into the social order, in these days of progress, some new principles involved in the institutional care of the sick. We are all but unanimously agreed that the near future is to bring us a day when every sick person, man, woman and child, must be taken to a hospital if he or she is to have the best possible care, because of the assemblage there of the vast and growing machinery necessary to diagnosis and treatment.

But this new social order finds, as an obstacle to its fulfillment, the increased cost of the care of the sick. There are complaints everywhere on the part of the people that they cannot afford the expense of hospital care, and there is no doubt that for many the comforts and luxuries and even the necessities of sickness are becoming an intolerable burden.

What is to be done about that? If people are to go to a hospital when they are sick, conditions there must be such as they can bear; in other words, the expenses of their care must be within their means. Perhaps 95 percent of the people are in what we have come to call the middle class, where the heads of families are on salary or wages, and where the burdens of every-day existence, including the high cost of living, are such that there is no money for such emergencies as an expensive spell of sickness.

We are trying to reduce these expenses by efficiency in administration: by economy in architecture and equipment and by the coordination of effort in various directions that prevent the overlapping of energy.

But there are doctors' bills to be paid. When a patient in moderate circumstances goes to a hospital he usually goes there as the private patient of some medical man, perhaps the family physician. The case proves to be one difficult to diagnose, and in these days of medical specialists the physician may want consultation. Let us say that the patient has come in under the care of a general practitioner. Presently he may need consultation with a surgeon, and they two may afterward desire the expert opinion of a specialist in internal medicine, and if the case still seems obscure, the nose and throat man may be wanted to pass on certain symptoms or indications that might associate the dominating findings in the case with some original nose or throat trouble, as, for instance, a tonsil involvement; and before the diagnosis is well in hand, it can easily happen that several specially trained men in the various branches of medicine may be desired if the patient is to have the best skill of highly trained specialists.

But all these consultations are clearly outside the means of the average patient. What are we going to do about it? Scientific medicine claims that better diagnosis is made today than ever before, due to this same specialization. And if medical progress means anything, it means that we can give the sick man or woman or child today a better chance of recovery than in the old days.

Are these chances to be the exclusive privilege of the rich who can afford to pay for many consultations? We know perfectly well that the poor patient in the free ward of the hospital can have the benefit of a dozen consultations if required without cost, and the wealthy can afford to pay for this service. What is the middle class to do about this?

If the signs of the times mean anything, they indicate that some organic arrangement must be made to cover all the incidence of sickness that will procure for the person in moderate circumstances all the skill of all the specialists working in the institution, and one of the gravest prob-

lems before the medical profession and the hospital is this particular one of how to secure to every patient in the hospital, rich or poor, or moderately circumstanced, the advantages of consultation under reasonable terms.

This problem has been solved in a few instances by the grouping or association of several specialists as an exclusive staff in a small hospital of their own creation. A surgeon, an internist, a nose and throat man, an obstetrician, a pediatrist, a dermatologist, and a neurologist have, in a few places, associated themselves together and inaugurated their own hospital. In one place each one of these men has his own private office in the institution. This hospital is so organized that it has an income from systematically arranged medical fees over and above its expenses, and this income is divided pro rata among the medical men who are stockholders in the enterprise. The patients are charged a small amount over and above the regular hospital expenses, and this amount is intended to cover the medical fee, and at the end of the year the totals of these items are divided among the staff stockholders.

In another hospital, a so-called "closed institution," the hospital pays its chief of staff a fixed salary, and he is expected to give all his time to the institution. This chief of staff has under him a number of younger men who have specialized in the various branches; these men are also paid a salary and give all their time to the institution. Since the organization of this particular hospital, experience has demonstrated the amounts in salaries that the institution can afford to pay, and the amounts under the head of medical fees that can be charged patients in addition to the regular hospital expenses.

It happens that the institution last mentioned has grown in popularity far beyond the expectation of its trustees and supporters, and the trustees are finding themselves under the necessity vastly to increase their capacity to take care of patients that are coming from long distances, even from the great centers of population where there are probably more highly trained specialists in the various branches of medicine than any institution could afford to pay. But the point is that the patient can have the benefit of what we might call a "group diagnosis" without having to pay exorbitant fees.

One might say that this is a revised form of the old contract system of medicine, and that it is to be frowned upon as having the effect to withhold from the physicians of the community their just fees as specialists. That may be true to a certain extent, but if progress in medicine is to be made, and if our vaunted claim of greater skill in the care of the sick is to be made good, then we must inaugurate some modification of some such system as this, or we must shamefully admit that the skill and science of modern medicine are for the exclusive use of the wealthy and of the extremely poor. This latter class obtains the benefit not for their own sakes, but for the education and training of medical men.

Within the next few years some method of coordinated medicine is to be installed in many hospitals in this country and those that are first on the ground with a well-developed system of that kind are going to reap vast rewards, not only in money benefits, but in the sense of the broader service given to the sick in their institutions.

Special Diseases in General Hospitals

In other pages of this issue will be found a paper by Dr. Lloyd B. Whitham, of Baltimore, urging the inclusion of the specialties in medicine in general hospitals.

We regard Dr. Whitham's plea as not only timely, in view of the rapidly growing number of new hospitals throughout the country, but highly necessary because of a growing tendency on the part of hospital boards and administrators to rule out of their institutions the various special diseases, such as those of the eye, ear, nose and throat, neurological and mental cases and the skin diseases, such as syphilis and gonorrhea, alcoholism and the so-called communicable infections.

There are two or three aspects of this problem; but looking at it from any conceivable viewpoint it seems almost medieval to think of conducting an institution for the care of the sick, and yet refusing, not only to take certain diseases, but refusing to keep these cases when they have developed from or as a part of something else within the walls of the hospital itself.

Sick people, when they enter a hospital, do not know what their disease is usually, and they enter the hospital to have the doctors find that out and cure them; moreover, sick people can give no guarantee that they will not get some other disease before they get out. A year or more ago Dr. Goldwater, acting as superintendent of Mount Sinai Hospital, was called over the phone and asked to take a pneumonia case from a special eye hospital in the city. Dr. Goldwater accepted the case under protest, and in telling of the incident before the American Hospital Association Convention at Boston, he entered a vehement protest against the ethics of a hospital so narrow in its policy or its equipment as to be ready to abandon a case just because there was a new complication. He urged that every hospital should be equipped

to handle any emergency that came up in any case, and insisted that institutions unwilling or unable to do so would better go out of existence. There can be no doubt that Dr. Goldwater's attitude was the correct one from the standpoint of the patient.

Now, Dr. Whitham adds two more excellent reasons why general hospitals should be general in the broadest meaning of the word "general," namely, for the experience of medical men because of the better opportunities afforded for interchange of knowledge between clinicians in the various specialties and in the major branches. He also cites the better opportunities for the training and education of medical students.

In various parts of the country there are springing up small groups of men banded together, an internist, a surgeon, a gynecologist and obstetrician and two or three specialists, for the purpose of conducting a hospital in collaboration with each other, to the end that the patients of each may have the benefit, on occasion, of the special skill of any or all the others. Consultation fees fall heavily on people in moderate circumstances, and this kind of cooperation will go far to minimize the expense of being sick, so far as the patient is concerned; will give him the benefit of the broadest counsel and skill, and for the medical men it will bring them experience that will make them far better clinicians.

General hospitals that do not move toward this new need are likely to find themselves left far behind their neighbors who are able to take care of "anything that comes along," and handle adequately any complications that may develop.

Extras in Hospital Architecture

In nearly every hospital built in this country there are numerous items of extraordinary expense which must be classified as "extras," and which always bring the cost of construction far above the estimates on which contracts have been made. Generally these extras are charged against the architect's ability, and that official is too often roundly abused because of these unexpected items of expenditure.

Had we not better think a little bit about these "extras" in construction, and try to locate the real blame? It is hardly ever the fault of the architect that extras are added.

Too often hospital boards of trustees, not a single member of which could make "head or tail" of a blue print or tracing or sketch, look casually over the plans, listen, with more or less understanding, to the architect's story as he shows them, give the plans their approval, tell him to "go ahead," and dismiss the matter from their minds, having the vaguest kind of notion of what their hospital is going to be when it is finished.

Members of medical staffs are no better; men who could make the most intricate circulation curve or follow the most bewildering cross curves of a protracted and perplexing case in all its bearings, are quite at sea when it comes to reading architectural drawings.

Often the plans are looked over by everybody supposed to be interested, and the architect has a right to feel that he has satisfied everybody; he "goes ahead," completes his plans, makes out his specifications, and, in conjunction with his building committee, lets his contracts.

After the building is part-way up, and has begun to take on definite form, the trustees and medical men begin to take an active interest in the arrangement, the materials and the general form. Then it is that changes are demanded; the trustees for the first time begin to agitate the question of the plumbing, the floors, and various parts of the installation; the doctors want changes made in the arrangement of their several departments; and the architect wakes up some fine morning to find a big row on over something that had not raised even a question when the plans were under discussion. The trustees and doctors can't "for the life of them" understand why it will cost an "extra" to put this partition ten feet over one way or another, or put a sink on the other side of the room from where it was planned; and generally they think the contractor and the architect are in a conspiracy to rob them.

Changes do cost money, after the work begins; partitions are usually predicated on certain plumbing or heating risers; the location of the plumbing fixtures and the steam fittings is made with reference to partitions; the electric service is planned to fit the walls and the partitions and doors and windows; when any one of these items is changed the whole scheme is disturbed, and all sorts of makeshifts must be practiced to meet the new and belated demands; and these things cost money.

Too often, trustees and doctors not only do not know how to read plans, but they are not sufficiently familiar with architectural matters to raise reasonable points during the discussion. And, on the other hand, the whole matter seems so obvious and self-evident to the architect, that it does not occur to him that his plans might just as well be ancient Egyptian scrawls, so far as his clients are concerned; and he does not go into the details and propose alternatives as he should do.

The lesson is that architects owe it to themselves to see that some one is on the job for the hospital, who can see the plans from the point

of interest of the hospital people who are to use the building, and who can bring up questions that he must know will protrude themselves later on, when changes are sure to mean "extras."

Trustees and staff members have a right to know what their hospital is going to be, and they owe it to themselves, and to those who are paying for the hospital, to see that a competent consultant is on the job with them, to see that things are started right. There need not be an "extra" of a dollar on a new hospital, and should not be; but the architect need not take all the blame if there are "extras."

William Orris Mann

Born 1869—Died April 9, 1915

Dr. William Orris Mann, president of the American Hospital Association and superintendent of the Massachusetts Homeopathic Hospital, Boston, died in his hospital at Boston on April 9, of broncho-pneumonia following an operation on April 4 for gall stones. Dr. Mann had apparently passed the crucial stage of his post-operative illness and was convalescent when pneumonia supervened.

It is useless to say that Dr. Mann's death comes to us as a great shock; in the prime of life and in the very zenith of his usefulness in the highest of all professions, he was taken almost without warning and he leaves to deplore his death a very large circle of personal friends, associates in the hospital world, who had come to know him and appreciate him, a sorrowing widow and two young daughters.

Dr. Mann was born at Randolph, Mass., in 1869; he attended the Thayer Academy for his pre-medical education and was graduated from the Boston University School of Medicine in 1892. During the next seven years he served successively as superintendent for the State Hospital for the Insane at Westboro, and the Minnesota State Hospital for the Insane at Fergus Falls.

In 1899 he was elected superintendent of the Massachusetts Homeopathic Hospital, in which he had served his internship. He has been at the helm of affairs in his institution while it grew from a modest, medium-sized hospital to one of the first in importance in this country.

Dr. Mann has been actively interested in the welfare of hospitals for many years; he has contributed largely in matters concerning their efficiency; he has instituted some ideals that have become standards in hospital practice; his activities covered almost the whole realm of hospital progress, architecture, physical equipment and organization.

At the time of his death he was engaged in a most important study of architectural design in connection with a maternity pavilion now in course of construction, and many of us had looked forward to finding new principles and new features of construction in this hospital, which, because of the deep study which he had given the subject, must have permeated the whole architectural fabric of this country.

Last August, in St. Paul, Dr. Mann was unanimously elected president of the American Hospital Association. He had given to the office the intensest study, and, as will be seen in other pages of this issue, he had prepared a program of the widest and fullest character, including almost every vital subject of interest to hospital administrators at the present time.

Our meeting at San Francisco must be shadowed because of our president's death, but mingled with our sadness there must be a spirit of exaltation that one of our number had been able to achieve so much for suffering humanity in spite of the shortness of his life. All of us were proud of Dr. Mann and his work, and our extreme grief at his untimely death must be mitigated when we know that the world is so much better for his having passed through it.

For Dr. Mann's widow, Mrs. Frances Fairchild Mann, and for his two daughters, Helen and Josephine, we have the deepest sympathy, and it

may cheer them only a little when we tell them that their husband and father had reached the very height of his profession, and that no man in this country had done more than he to alleviate the sufferings of the sick, helpless and unfortunate.

Improvement of Dispensary Standards

Two attempts of importance are now under way in this country towards the improvement of dispensary work, whose growth has been so remarkable a feature in the recent development of medical institutions.

The committee on out-patient work of the American Hospital Association has for two years presented at the annual meeting of the Association a report showing existing conditions throughout the country, and in the report of 1914 they presented a succinct list of recommendations or minimum requirements which it was felt every dispensary ought to supply.

The work of this committee has necessarily been in the study of a general field, as so broad an area has had to be covered. In New York City a definite and effective piece of local, intensive work has been undertaken by the Association of Outpatient Clinics, formed three years ago largely through the initiative of Dr. S. S. Goldwater, including most of the representative clinics in Manhattan and Brooklyn.

The article in this issue of THE MODERN HOSPITAL by Dr. E. H. Lewinski-Corwin, Executive Secretary of the Associated Clinics, describes the standards outlined by representative medical men in a number of specialties—internal medicine, pediatrics, genito-urinary diseases, gynecology, etc. While in some clinics these standards will seem too elementary and inadequate, in the majority of dispensaries their enforcement would mean vast improvement.[1]

The time has gone by when hospitals can afford to treat the out-patient department as a second cousin under the bar sinister. The dispensary is more and more recognized as an important adjunct of the hospital, both in increasing the efficiency of hospital service and in saving the community in the relief and prevention of disease.

The Pan-American Medical Congress

In another column will be found a call for the Seventh Pan-American Congress, to meet in San Francisco, June 17-21, at a time when the American Hospital Association and the American Medical Association members are rounding up for their conventions.

A number of these congresses, which largely deal with health topics, have been held, both in this country and in Latin America; some excellent work has been done, especially in relation to quarantine and other forms of health protection; and perhaps these meetings have done more to cement cordial relations between the Americas than all other agencies combined; and this particular meeting, held when all the rest of the world is at war, should be of vast importance to all the countries participating, and as an example of the beneficence of peace to even the war-crazed peoples of Europe.

There are some magnificent hospitals in the states of our neighbors to the south, and quite as good medicine and surgery are being practiced as in the foremost of our own institutions; while in the broader fields of social welfare, our neighbors have in many directions gone us "one better," and have achieved a closer brotherhood than we; their great central social service associations seem almost the apotheosis of the brotherhood of man.

It is an inspiration to one interested in scientific medicine to go through some of the transactions of the previous meetings of this Congress, and observe the painstaking, technically exact methods, created oftentimes at the instance of delegates from countries we are in the habit of regarding as benighted, for the prevention of the quarantinable diseases; and without any question our closer commercial relations have been encouraged more by the efficiency with which their quarantine has been administered, than by all the financial machinery which has been at work.

This year's meeting, celebrating the creation of the Panama Canal, another broad highway for intercourse between all Americans, should mark a long step forward in good will and friendship.

Those who can do so should participate in this epochal congress on the coast, and their first duty is to register and pay the membership fee; there will be social features that will bring us new and valued friends who will be well worth while, and as for the transactions of the congress itself, it is more than probable that there will be an opportunity to participate in work whose far-reaching effects will shine out far into the future, and beside which the death-baiting work in the trenches of Europe will seem pygmy indeed.

[1]Copies of the reports of the committee on out-patient work of the American Hospital Association can be obtained by addressing the Chairman, Michael M. Davis, Jr., 25 Bennet street, Boston, Mass.; and of the clinical standards of the Associated Out-patient Clinics of New York City, by writing to Dr. E. H. Lewinski-Corwin, 17 West 43d street, New York, N. Y.

Authorities of San Diego county, Cal., are investigating the cost of establishing and maintaining a sanatorium for the sick poor of the county, who do not require medical attention continually. It is believed that such a sanatorium might be made practically self-supporting.

THE SAN FRANCISCO MEETING—PRELIMINARY PROGRAM

Seventeenth Annual Conference of American Hospital Association to Be Held at Hotel Inside Inn, San Francisco, June 22, 23, 24 and 25—Special Train from Chicago—The Program and Running Comment on Topics to Be Discussed

American Hospital Association Special

Arrangements have been made to run a special train from Chicago to San Francisco.

The Special will be splendidly equipped and thoroughly up-to-date, including standard drawing-room, sleeping cars, dining car and a lounge sun-parlor car.

The Special will be operated on the following schedule:

Leave Chicago 6:10 p. m. June 13.

Arrive San Francisco 3:30 p. m. June 21.

For reservations apply to Mr. Asa Bacon, Treasurer, Superintendent Presbyterian Hospital, Chicago, Ill.

There are great opportunities for benefits to the superintendent who attends this meeting.

First, to himself, by:

a. meeting other men; exchanging experiences in similar lines.

b. hearing and meeting big men; comprehensive reports on big topics.

c. inspiration and fresh energy; getting out of the rut.

d. learning relations of results to efforts; learning (1) how to analyze and improve methods. (2) the value and use of records.

e. getting himself known (he has a chance to speak if he desires).

Second, to his hospital, by:

a. getting (1) information about other hospitals. (2) information about relation of costs to work done. (3) inside information as to the best methods of promotion of economy and efficiency in hospital management.

b. establishing connections with sources of further information from which through correspondence he may solve old and new problems.

c. getting a chance to vote on matters for the benefit of his hospital.

Third, to his profession, by:

a. raising the standard of the profession.

b. increasing personal efficiency.

c. helping the weaker brother by giving information.

d. educating the public to hospital standards.

In view of the fact that these opportunities come but once a year it is plainly the duty and privilege of every hospital superintendent to attend the Convention.

In view of the fact that the hospital will benefit largely by the superintendent's attendance at the convention it is the duty of the board in every case to pay his expenses.

The following preliminary program is the result of the efforts of the late Dr. William O. Mann. It is doubtless one of the best that has ever been prepared for this Association. In fact, so important and practical are the subjects discussed that no hospital worker can afford to miss this meeting. H. A. BOYCE, Secretary.

Preliminary Program

TUESDAY, JUNE 22, 1915

9:30-10:00 A. M.

Registration and enrollment.

MORNING SESSION—10 A. M.

1. Invocation.
2. Address of Welcome.
3. President's Address—A. B. Ancker, M. D., First Vice-President, Superintendent City and County Hospital, St. Paul, Minn.
4. Report of Committee on Inspection, Classification and Standardization of Hospitals—Dr. John A. Hornsby, Chairman, Editor Modern Hospital, Tower Building, Chicago, Ill.
5. Report of Committee on Medical Organization and Medical Education—Dr. Joseph B. Howland, Assistant Administrator Massachusetts General Hospital, Boston, Mass.
6. List of Nomenclature of Diseases and System of Filing—James L. Whitney, M. D., University of California Hospital, San Francisco, Cal.

AFTERNOON SESSION—2:30 P. M.

1. The Effect of Legislation Upon the Schools for Nurses in California—Miss Anna C. Jamme, Secretary Board of Registration of Nurses, Sacramento, Cal.
2. The Eight-Hour Law, Its Present and Its Future—Miss Anne A. Williamson, R. N., Superintendent of Nurses California Hospital, Los Angeles, Cal.
3. High Ideals in Nursing—Mrs. Alice H. Flash, Superintendent of Nurses Massachusetts Homeopathic Hospital, Boston, Mass.
4. Progress in Nursing—Miss Harriet Leck, Principal Grace Hospital Training School for Nurses, Detroit, Mich.
5. Report of the Committee to Consider the Grading and Classification of Nurses—Miss Charlotte A. Aikens, Chairman, Editor Trained Nurse and Hospital Review, Detroit, Mich.
6. Report of Committee on Hospital Finance and Cost Accounting—Miss Lucia L. Jaquith, Superintendent Memorial Hospital, Worcester, Mass.
7. Correlation of Hospital Diet—Miss Grace McCulloch, Dietitian Peter Bent Brigham Hospital, Boston, Mass.

WEDNESDAY, JUNE 23

MORNING SESSION—10 A. M.

1. Method of Rating Professional Men for Hospital Appointments, for Promotion and for Hospital Reports—Robert L. Dickinson, M. D., Brooklyn, N. Y.
2. Little Things that are Big Things in Hospital Management—Robert J. Wilson, M. D., Director Health Department Hospital, New York City.
3. The Hospital Superintendent and the Architect—Mr. Warren C. Hill, Architect, Kendall, Taylor Co., Boston, Mass.
4. Some Apparently Accepted Hospital Units—Henry M. Pollock, M. D., Superintendent Norwich State Hospital, Norwich, Conn.
5. Question Box.

AFTERNOON SESSION—2:30 P. M.

Joint meeting of the American Hospital Association and American Nurses' Association, Greek Theater, Berkeley, Cal.

EVENING SESSION—8 P. M.

1. Modern Hospital Illumination—David Crownfield, Pettingill, Andrews Company, Boston, Mass.
2. The Possibilities of Future Development in the Service Rendered by a Hospital to the Community—A. R. Warner, M. D., Superintendent Lakeside Hospital, Cleveland, Ohio.
3. State Aid to Private Charitable Institutions—W. H. Walsh, M. D., Medical Superintendent The Children's Hospital, Philadelphia, Pa.
4. Where Should the Housekeeper for the Small Hospital be Taught and Where Trained?—Miss Emma A. Anderson, Superintendent New England Baptist Hospital, Boston, Mass.
5. What Should Hospital Dietitians or Dietitian Housekeepers be Taught and How Trained?—Miss Laura E. Coleman, Superintendent Homeopathic Hospital, Buffalo, N. Y.
6. The Relation of a Children's Department in a Teaching Hospital to Children's Institutions of the City or State—William P. Lucas, M. D., Professor of Pediatrics University of California, San Francisco, Cal.

THURSDAY, JUNE 24

MORNING SESSION—10 A. M.

1. The Question of Efficiency and Simplicity in Hospital Records—Edward Martin, M. D., Professor of Surgery, University of Pennsylvania, Philadelphia, Pa.
2. Clinical Records in Relation to Teaching and Research. A New Plan to Promote Conservation and Utilization of Material—Eugene S. Kilgore, M. D., Instructor of Medicine, University of California Hospital, San Francisco, Cal.
3. Heating, Ventilating, and Power Plants of Hospitals—Mr. Dwight D. Kimball, Consulting Engineer; President American Society of Heating and Ventilating Engineers; Member of New York State Commission on Ventilation, New York City.

   Discussion—Mr. O. H. Bartine, Superintendent Hospital for Ruptured and Crippled, New York City.
4. For the Greater Success of the Hospital—George L. Perusse, M. D., Superintendent Michael Reese Hospital, Chicago, Ill.
5. Efficiency and Progress in Hospitals—Mr. Howell Wright, Superintendent City Hospital, Cleveland, Ohio.
6. Report of Committee on Hospital Information—Dr. Winford Smith, Superintendent Johns Hopkins Hospital, Baltimore, Md.

AFTERNOON SESSION—2:30 P. M.

1. The Building of the Hospital. Construction—Mr. Oliver H. Bartine, Superintendent Hospital for Ruptured and Crippled, New York City.

   Discussion—Mr. Dwight W. Kimball, Consulting Engineer, President, American Society of Heating and Ventilating Engineers; Member of New York State Commission of Ventilation, New York City.
2. Medical and Surgical Efficiency in General Hospitals—Frederic A. Washburn, M. D., Administrator Massachusetts General Hospital, Boston, Mass.
3. Engine Room Economics—Thomas Howell, M. D., Superintendent New York Hospital, New York City; Mr. Phillip Murray, Engineer, New York City.
4. Contemporary Mistakes in Hospital Construction—John A. Hornsby, M. D., Editor Modern Hospital, Chicago, Ill.
5. Report of Committee on Constitution and By-Laws—Mr. Richard P. Borden, Chairman, Fall River, Mass.
6. The Company Hospital—R. W. Corwin, M. D., Minnequa Hospital, Pueblo, Colo.

EVENING SESSION—8 P. M.

1. The Need of Pay Clinics for Persons with Incomes from $900 to $3,000—Richard C. Cabot, M. D., Massachusetts General Hospital, Boston, Mass.
2. Care of Cases of Mental Disease in General Hospitals—Henry M. Hurd, M. D., Secretary Johns Hopkins Hospital, Baltimore, Md.
3. Report of the Committee on Out-Patient Work—Michael M. Davis, Jr., Ph. D., Director Boston Dispensary, Boston, Mass.
4. Report of the Committee to Consider Suggestions in Dr. Howell's Address Last Year.

FRIDAY, JUNE 25

MORNING SESSION—10 A. M.

1. Hospital Efficiency—Mr. Richard Waterman, Secretary Committee on Efficiency, Philadelphia Medical Society.
2. Purchasing Hospital Supplies—Louis Burlingham, M. D., Assistant Superintendent Peter Bent Brigham Hospital, Boston, Mass.
3. A Few Hospital Problems and Their Solution—J. McLean Moulder, M. D., Superintendent Methodist Hospital, Indianapolis Hospital, Indianapolis, Ind.
4. Fire Protection and Prevention in Old Hospitals—John M. Peters, M. D., Superintendent Rhode Island Hospital, Providence, R. I.
5. Medical Social Service Department Problems in a State University—Louis Morrow, M. D., University of California, San Francisco, Cal.
6. Interdependence Between Hospital and Outside Work—Richard M. Bradley, Thomas Thompson Trust, Boston, Mass.

AFTERNOON SESSION—2 P. M.

1. Report of Membership Committee.
2. Report of Treasurer.
3. Report of Auditing Committee.
4. Report of Committee to Study the Character, Cost and Value of Direct and Indirect Work for the Prevention of Diseases now conducted by Hospitals and Dispensaries, to arrange in the order of their Importance and Practicability Successive Steps for the Extension of such work, and to Prepare Methods for its Financial Support and for its Correlation with the similar work of Other Agencies, Public and Private—Dr. J. A. Hornsby, Editor Modern Hospital, Tower Building, Chicago, Ill.
5. Report of Committee to Memorialize Congress to Place Hospital Instruments on the Free List—Rev. Geo. F. Clover, Superintendent St. Luke's Hospital, New York City.
6. Report of Committee on Time and Place of 18th Annual Conference.
7. Report of Nominations Committee.
8. Election of Officers.
9. Introduction of President Elect.

ADJOURNMENT

Organization of the American Hospital Association

MEMBERSHIP

Active members shall be those who at the time of their election are trustees or executive heads of hospitals.

Associate members shall be executive officers of the hospitals, next in authority below the superintendent, or contributors to, or officers or members of any association the object of which is the foundation of hospitals or the promotion of the interest of organized medical charities, hospital physicians, surgeons, pathologists and superintendents of nurses.

All applications for membership shall be in writing, and shall be endorsed by one or more members.

The annual dues of active members shall be $5.00; the dues of associate members shall be $2.00. (Kindly send the amount of dues with application.)

Application blanks can be obtained from the secretary on request.

OFFICERS, 1914-15

President—Dr. William O. Mann, Superintendent Massachusetts Homeopathic Hospital, Boston, Mass.
First Vice-President—Dr. A. B. Ancker, Superintendent City and County Hospital, St. Paul, Minn.
Second Vice-President—Mr. William W. Kinney, Superintendent Victoria General Hospital, Halifax, N. S.
Third Vice-President—Miss Ida M. Barrett, Superintendent Union Benevolent Hospital, Grand Rapids, Mich.
Secretary—Dr. H. A. Boyce, Superintendent Kingston General Hospital, Kingston, Ont.
Treasurer—Mr. Asa Bacon, Superintendent Presbyterian Hospital, Chicago, Ill.

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Dr. R. G. Broderick, Health Officer, San Francisco, Cal.
Dr. Arthur A. O'Neil, Superintendent Isolation Hospital, San Francisco, Cal.
Dr. Theodore Olmsted, Superintendent Samuel Merritt Hospital, Oakland, Cal.
Miss A. A. Williamson, R. N., The California Hospital, Los Angeles, Cal.

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Mr. Howell Wright, Superintendent City Hospital, Cleveland, Ohio.
Dr. J. McLean Moulder, Superintendent Methodist Hospital, Indianapolis, Ind.

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Dr. Louis B. Baldwin, Superintendent University Hospital, Minneapolis, Minn.
Miss Laura E. Coleman, Superintendent Homeopathic Hospital, Buffalo, N. Y.

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Dr. John A. Hornsby, Editor The Modern Hospital, Tower Building, Chicago, Ill.
Dr. A. B. Ancker, Superintendent City and County Hospital, St. Paul, Minn.

COMMITTEE ON HOSPITAL EFFICIENCY, HOSPITAL PROGRESS AND HOSPITAL CONSTRUCTION

Dr. Joseph B. Howland, Assistant Administrator Massachusetts General Hospital, Boston, Mass.—Medical Organization and Education.
Dr. H. M. Pollock, Superintendent Norwich Hospital for the Insane, Norwich, Conn.—Hospital Construction.
Miss Lucia Jaquith, Superintendent Memorial Hospital, Worcester, Mass.—Hospital Finances and Cost Accounting.
Mr. Howell Wright, Superintendent City Hospital, Cleveland, Ohio.—Efficiency and Progress.

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Miss Mary E. L. Thrasher, Superintendent Robert Bent Brigham Hospital, Boston, Mass.
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Dr. Henry M. Hurd, Secretary Johns Hopkins Hospital, Baltimore, Md.
Dr. Frederic A. Washburn, Administrator Massachusetts General Hospital, Boston, Mass.

COMMITTEE TO CONSIDER THE GRADING AND CLASSIFICATION OF NURSES

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Miss Ida M. Barrett, Superintendent U. B. A. Hospital, Grand Rapids, Mich.
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Dr. William O. Mann, Superintendent Massachusetts Homeopathic Hospital, Boston, Mass.
Dr. R. R. Ross, Superintendent Buffalo General Hospital, Buffalo, N. Y.
Dr. Thos. Howell, Superintendent New York Hospital, New York City.

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Dr. S. S. Goldwater, Commissioner of Health, New York City.
Dr. Henry M. Hurd, Secretary Johns Hopkins Hospital, Baltimore, Md.
Dr. John O. Skinner, Superintendent Columbia Hospital, Washington, D. C.

COMMITTEE TO STUDY THE CHARACTER, COST AND VALUE OF DIRECT AND INDIRECT WORK FOR THE PREVENTION OF DISEASES NOW CONDUCTED BY HOSPITALS AND DISPENSARIES, TO ARRANGE IN THE ORDER OF THEIR IMPORTANCE AND PRACTICABILITY SUCCESSIVE STEPS FOR THE EXTENSION OF SUCH WORK, AND TO PREPARE METHODS FOR ITS FINANCIAL SUPPORT AND FOR ITS CORRELATION WITH THE SIMILAR WORK OF OTHER AGENCIES, PUBLIC AND PRIVATE

Dr. J. A. Hornsby, Modern Hospital, Tower Building, Chicago, Ill.
Dr. W. L. Babcock, Superintendent Grace Hospital, Detroit, Mich.
Mr. Sidney E. Goldstein, Director Free Synagogue, New York City.
Miss Charlotte A. Aikens, Trained Nurse and Hospital Review, Detroit, Mich.
Mr. Michael M. Davis, Jr., Ph. D., Director Boston Dispensary, Boston, Mass.

COMMITTEE TO MEMORIALIZE CONGRESS TO PLACE HOSPITAL INSTRUMENTS ON THE FREE LIST

Rev. Geo. F. Clover, Superintendent St. Luke's Hospital, New York, N. Y.
Rev. A. S. Kavanagh, D. D., Superintendent Methodist Episcopal Hospital, Brooklyn, N. Y.
Dr. J. N. E. Brown, Superintendent Detroit General Hospital, Detroit, Mich.
Dr. W. L. Babcock, Superintendent Grace Hospital, Detroit, Mich.
Dr. W. H. Smith, Superintendent Johns Hopkins Hospital, Baltimore, Md.

COMMITTEE TO CONSIDER THE SUGGESTIONS IN DR. HOWELL'S PAPER

Dr. Robert J. Wilson, Superintendent Health Department Hospitals, Willard Parker Hospital, New York City.
Dr. C. H. Young, Superintendent Presbyterian Hospital, New York City.
Dr. Frederick Brush, Superintendent Burke Convalescent Home, New York City.

The San Francisco Program

It was eminently fitting that the last service of Dr. William O. Mann to suffering humanity should have been the preparation of the splendid program which we are to have at San Francisco for the June meeting.

With each year the programs for the Hospital Association have been growing better, more definitely valuable; this year, in the program, there seems to be almost an apotheosis of hospital service. Dr. Mann must have given an immense amount of time and study to the preparation of his program; in fact, he created the program along different lines from those that others had followed. As soon as the St. Paul meeting was over, Dr. Mann sat himself down quietly in his office and mapped out what he thought a program should be and in many instances assigned subjects to people whom he thought should be able to write on those subjects. He conducted an immense amount of correspondence about the papers that he wanted, often suggesting to authors how he thought a subject should be treated, and he had the happy faculty of being able to change preconceived notions of some writers so that the final papers would be more valuable and instructive. The result is that the San Francisco program must be more profitable to the hospital people than any program that has ever been made up. Some extremely interesting topics are to be discussed in the program, as will be seen from perusal of it on other pages of this issue.

Some of these topics are unique and are deserving of special mention in this connection.

TUESDAY MORNING'S SESSION

Dr. Ancker will have a difficult duty to perform in reading, this year, the president's address in substitution for that which Dr. Mann was to have read. Without question he will measure up to the occasion and will give us a contribution worthy of the time and place and of the program.

Dr. Joseph B. Howland has a timely topic in his report of the Committee on "Medical Organization and Medical Education." We are coming on a new era in medical staff organization for hospitals; the isolated work of individual staff members no longer suffices for modern hospital purposes. There must be team work, coordination of effort and cessation of the overlapping of energy such as we have so often had in the past. Medical staff members must be banded together to create comprehensive results, predicated, not on individual effort, but on group enterprise and study and research and initiative. Undoubtedly Dr. Howland will tell us something about this new form of hospital service.

Dr. Whitney's paper on "The Nomenclature of Diseases and Systems of Filing" must discuss reconstructive measures concerning medical history work; all the processes of medicine in the hospital are changing; factors that were formerly considered of little or no importance have now taken their place as fundamental principles in record keeping and filing, as part of a reorganized system of hospital literature for study purposes. It is no longer adequate for records to be filed merely as the history of individual patients; they must be filed so that the medical men in the institution may have access to them for purposes of comparative study and research; and hence new systems must be evolved, systems perhaps contemplating more elaborate cross-indexing so that records may be available not only for those who contemplate a reference to the case of the patient, but so that any investigator may have at his finger ends groups of cases on special diseases, or groups of cases of diseases of special organs.

TUESDAY AFTERNOON'S SESSION

Tuesday afternoon's session is given over to nursing topics. It was evidently Dr. Mann's idea to group topics for discussion so that those interested in some particular subject need not attend every meeting, but could be there when their particular subjects were in the program. There are no more vital matters up for hospital discussion these days than those concerning nursing; but it was one of Dr. Mann's ideals that nursing in the hospital was one of the pieces of machinery, and not an independent organism. Some of the papers on this part of the program concern some new principles, new legislation and rather radical methods in nursing, viz., those that have to do with California legislation, in which the nurse for the first time is placed in the attitude of a union labor worker, working under the department of labor of the state, and protected by ordinary labor laws. The California nursing law has now been in force long enough for some end results to be at hand. There were great differences of opinion when this legislation was enacted, different viewpoints. Miss Williamson's paper, last year, told us a great deal about the California nursing law, but it was not an achievement at that time. Undoubtedly we shall have some summaries this year and a lively discussion as to what the law has done for the public, for the hospitals and for graduate and pupil nurses.

The old bone of contention, the "Report of the Committee to Consider the Grading and Classification of Nurses," is to be up for discussion again. Let us hope that one year may pass without the long, bitter, fruitless discussions on this subject that we have had in recent years past. It is obvious to many of us that while we are discussing such a subject as this in a purely academic and theoretical way, the problem itself is well along towards solution by the hospitals in their every-day work. Some fine day this able committee will wake up to find that while its members are still far apart and still occupying controversial attitudes toward each other, the subject they are discussing has been solved outside their group.

Miss Grace McCulloch's paper on "The Correlation of Hospital Diet" ought to be interesting and instructive. Miss McCulloch has been doing some able work in the Peter Bent Brigham Hospital in connection with a staff of extremely able men, and perhaps she will have something new to tell us about the physical workings of a special diet system that can actually get results in the routine practice of a hospital.

WEDNESDAY MORNING'S SESSION

Wednesday morning's session is given over to the discussion of principles of hospital administration, especially concerning the medical staff, and predicated sometimes upon hospital architecture, as, for instance, in Mr. Hill's paper on "The Hospital Superintendent and the Architect," and Dr. Pollock's paper on "Some Apparently Accepted Hospital Units." Dr. Pollock is reputed to be one

of the most systematic hospital administrators in this country and his conduct of his own institution has received nation-wide recognition. If Dr. Pollock has developed some views as to the internal arrangements of hospital units that will facilitate administration, his paper will have served a most profitable purpose because too often we are permitting architects to lay out our hospitals for us with reference to "architectural form," and without any reference whatever to the purposes for which the hospital is to be used. Let us hope that Mr. Hill's paper will serve to bring the hospital administrator and the architect into closer accord and into a better understanding of each other's attitude and viewpoint. It is very certain that these two factors in the building of a hospital do not understand each other at the present time, and it is equally certain that their differences are due to a misunderstanding of each other's attitude rather than to a wilful and obstinate disregard of each other's interests. Mr. Hill can do a great deal to help clear up what is now a rather chaotic condition of things.

Dr. Wilson is on the active firing line every minute of every day in the year. He does things on a large scale and in a large way; he must handle great numbers of people quickly as well as efficiently; the "little things," therefore, turn out, in the course of a year, to be very big things; the saving of a minute here and a minute there, the saving of an item of food, infinitely small pieces of material, form, in the aggregate, great savings or great losses. To most of us, in our work, things are handled on so small a scale that the small things are overlooked. If Dr. Wilson can bring us to a realization of some "Little Things That Are Big Things in Hospital Management," he will be performing a very signal service for us all.

Dr. Dickinson is one of the few active, energetic and busy members of the medical profession who are concerned in the details of hospital administration. If all our staff members were as keenly alive to the principles of systematic work in hospitals there would be far better team work between the administration and the medical staff. If Dr. Dickinson seems to some of us to have overdrawn a bit in his evaluation of "motion-saving," it is because he has been keenly alive to the waste of effort and time on the part of many clinicians, surgeons and physicians alike. Undoubtedly Dr. Dickinson's summing up of the factors concerned in the grading of hospital staff men will be instructive and especially so to medical staff members.

WEDNESDAY EVENING

There are some extremely interesting topics to be discussed in the evening session on Wednesday. We hospital people have been thinking in our own terms concerning hospital illumination and not always with reference to scientific correlated facts. Now we are to have injected into our deliberations on this subject the opinions of an expert on hospital illumination, in the paper of Mr. David Crownfield on "Modern Hospital Illumination." Undoubtedly Mr. Crownfield will discuss illumination from various viewpoints and in connection with various factors that are always present in hospitals—the difficulties in the way of providing sufficient light under satisfactory conditions where there are numbers of people in bed suffering from various degrees of illness and from various diseases, and whose conditions are often exacting in the matter of light and illumination. The question of wall colorings is a tremendously important factor in illumination; as yet, we have had very little accurate information as to the economy and efficiency of given units of light under different color schemes, in rooms and wards. Some exact information on this point would be welcome.

Lakeside Hospital, Cleveland, has gone as far toward meeting the universal welfare needs of the community as any hospital in this country. Mr. Samuel Mather, president of the hospital, is a real hospital trustee and gives an immense amount of time and study to the welfare of the institution over which he presides. There is team work between Mr. Mather and the superintendent of the hospital, Dr. A. R. Warner, such as is seldom seen in this country. Mr. Mather is a successful business man and has brought to the affairs of Lakeside Hospital a keen, discriminating judgment. Dr. Warner has been a hard student of hospital needs; in Lakeside Hospital some really wonderful results have been attained, results that have gone far toward helping Cleveland in its welfare service to the community, a service that has not been attained in any other community in this country. Dr. Warner knows that the care of the sick in bed in the hospital is only a fraction of the service that the institution owes to its community, and in his paper at our meeting he will discuss not only the things that Lakeside Hospital is accomplishing, but things that it is to accomplish in the near future.

Pennsylvania has the most iniquitous state charity laws of any state in the union. The state charity law of that state makes a virtue of skillful lying and misrepresentation on the part of hospital trustees and administrators. That hospital fares best at the hands of the Pennsylvania legislature that has the greatest amount of political influence, coupled with the ability to make a glittering showing in its figures. Dr. Walsh, who, before he became superintendent of the Children's Hospital in Philadelphia, was superintendent of the Municipal Isolation Hospital of that city, knows Philadelphia politics and Pennsylvania politics intimately; he not only knows the curse to the state in the present Pennsylvania state charity law, but he has a cure for the evil effects. If Pennsylvania only were concerned in this matter we could easily decline to become excited about it, but the question of state and municipal aid to charitable institutions is active just now and a demand for financial help for institutions doing charity work is insistent and growing. The problem must be met in many states and cities and it is time we all gave some serious thought as to how this aid can be meted out so that it will do good and not harm; so that it will relieve an unjust burden from many institutions without robbing the public funds for the benefit of institutions that do not need them and that should not have them.

Miss Anderson's paper on "Where Should the Housekeeper for the Small Hospital Be Taught and Trained?" brings up a homely but very much mooted question. The housekeeper in the hospital can be a joy or a sorrow; if she is the right kind of woman, trained in the right way and capable of doing the work that a housekeeper in a private home does, she can relieve the superintendent of the institution of infinite detail and worry; but the institution housekeeping is a very specialized service and women must be trained somehow, somewhere, if they are to succeed in it. Our internal economies are almost wholly dependent on the housekeeper; and yet salaries of housekeepers are small, as a rule, and they do not attract many highly educated women, or women of executive ability. Most housekeepers do things in their institutions in a routine sort of way, some of them by mere instinct, others because they have always done them so. Education and the ability to think, and special training would help immeasurably in the successful work of any housekeeper and if Miss Anderson has a key to the training of women suitably for such service she will be conferring a great service on the hospitals if she will let us have it.

Miss Laura E. Coleman's paper is well bracketed with Miss Anderson's and the one will accentuate the other, and the two should make a most welcome symposium.

THURSDAY MORNING

Thursday morning's session is a mixed program, but there are some excellent topics on it. It is rather to be deplored that Dr. Edward Martin's paper on the question of "Efficiency and Simplicity in Hospital Records" could not have been bracketed with that of Dr. Whitney who speaks upon the same subject on Tuesday morning. Dr. Martin is chairman of the Philadelphia Hospital Association and has given a great amount of time and study to hospital administration. In his work as a clinician, and as one of the famous surgeons of the day, he has had to keep abreast of hospital literature, and he will have evolved some definite conclusions as to how records may be kept and filed so that they can be always available in the broadest possible way.

Another paper of this same sort is that of Dr. Kilgore, instructor in medicine in the University of California Hospital, on "Clinical Records in Relation to Teaching and Research; a New Plan to Promote Conservation and Utilization of Material." These papers should make a unique and most valuable trilogy on this subject.

Every day problems of heat and ventilation are up for discussion in our hospitals, and as in the case of light, we have not had available for our purposes very much accurate information. Recently we have heard very much of the comparative claims of steam and hot water for heating, and a good many of us have hazy views as to the comparative economy and efficiency of these two systems; and there is yet very much to be said about the supply of whichever one of these elements is employed. The old float valve that has "clicked" its way to the irritated nerve ends of generations of sick people is being abandoned and the thermostatic valve is taking its place. There are a number of these valves on the market and many claims are made for each. Perhaps Mr. Kimball will help us to a better understanding of their merits and demerits. And so with our mixing chambers for the bath establishment. Must we continue to accumulate great tanks of water of the proper temperature in order to avoid burning or chilling patients during the bath, or have we actually arrived at a time when tanks have been replaced by automatic, accurately controlled thermostatic mixers? As to ventilation, Mr. Kimball's art or science, that of engineering, will not carry him far toward the solution of some of our problems. In the Hospital Section of the American Medical Association last year we had a symposium on ventilation, participated in by some of the best engineers, sanitarians, hygienists and specialists in medicine that the country affords, and the sum total results of the symposium centered in a recommendation that a comprehensive study of the subject be made under the auspices of the Council on Public Health of the American Medical Association. That study will undoubtedly be made, but it is slow in commencing. However, we know that mechanical ventilation without extraneous factors is wholly inadequate for hospital purposes. We must have humidity and the amount has not been settled. We must have fresh air and it is not yet settled whether the warming of air by mechanical means does or does not render it unavailable for use in hospital rooms. There are those who think that the warming of air kills it, so to speak, and renders it unacceptable. This is a physiological and not a chemical nor an engineering question. Then there is no doubt that there must be different airs for people suffering from different diseases; in other words, the heart ward cannot be grouped with the tuberculosis ward, where ventilation is concerned, and the nursery cannot be treated as a unit with the maternity mothers' department.

Before he became superintendent of the Cleveland City Hospital Mr. Howell Wright was a social and welfare worker and had given a great amount of study to the social problems in cities, and to the relation between various factors of helpfulness. In two reports that he has made to the mayor of the city of Cleveland, on the plans and purposes of the new hospital, he has developed some very advanced thoughts and has in course of evolution some advanced practices concerning a correlation of the work of the hospital and various other welfare factors in the city. In his paper on "Efficiency and Progress in Hospitals" he will, without any question, bring us some practical solutions of problems that are now active and pressing concerning the relation of acute disease hospitals to the community at large.

THURSDAY EVENING

Always breaking out where least expected in his leadership in the realm of social service, Dr. Richard C. Cabot will present to us in his paper on "The Need of Pay Clinics for Persons With Incomes from $900 to $3,000" a most attractive proposition, and one that is likely to take strong hold in this country. Dr. Cabot has seen the need of service for people in moderate circumstances who are sick; he knows that these people cannot afford consultation after consultation, and individual medical fees, one on top of another, and he realizes that this is an immense class that must be served, as indicated in an editorial on "Team Work" in this issue. It goes without saying that Dr. Cabot will be able to tell us how he proposes to serve this class of sick and at the same time do justice to the medical profession who must make a large part of their fees out of people in average circumstances if they are to continue to practice medicine. Will he propose that moderate fees shall be collected as a part of the clinical service, and that these shall be divided between groups of medical men who are participating in the clinic, or how will he solve the problem? It is a most interesting one.

In the Phipps Psychiatric Clinic, connected with Johns Hopkins Hospital, some comprehensive work has been done during the past year to develop the relative value between the psychopathic and the general hospital for the care and cure of certain of the mental and nervous diseases. Dr. Hurd, for many years superintendent of Johns Hopkins Hospital and always in touch with its activities, was a teacher in the department of nervous and mental diseases in the university. His diversified activities have, therefore, been concentrated more or less on the acute problem of the "Care of Cases of Mental Diseases in General Hospitals." For many years we shackled patients who were not easily controlled, and we dosed them with narcotic drugs. That day has gone by and there is a better solution of the problem now. Dr. Hurd is quite sure that many of these cases can be quite as well or even better cared for in general hospitals than in hospitals for the mentally sick. He has some new data upon which to base his conclusions and some new solutions for the adequate care of delirious and disturbed patients in general hospitals. His paper should be instructive and entertaining and profitable.

FRIDAY MORNING

Not everything has been said yet about the economy of purchasing for hospital purposes; too much has been said concerning the dickering point between the buyer and the seller of hospital supplies, and not enough about the

ability of the buyer to differentiate in a scientific way between good and bad products. Dr. Burlingham had a long training as an assistant in the Massachusetts General Hospital before he went with Dr. Howard to the Peter Bent Brigham, where he has had the most exacting teacher in this country. He should tell us some things of real value about the art and science of buying.

Nowadays, no hospital is built except it be planned to be as thoroughly fireproof as modern methods can make it, and the question of fire protection in new hospitals resolves itself into the installing of hand apparatus to put out a fire in a room or ward. Hardly ever would such a fire get beyond the place of its origin and aside from the panic that might be created would do little harm. But there are thousands of hospitals in this country that are not fireproof, and that would burn like tinder if they caught fire. Dr. John M. Peters, for twenty-five years a hospital administrator and one of the keenest students in the profession, is going to tell us, in his paper on "Fire Protection and Prevention in Old Hospitals" what we can do to make our old buildings habitable. There is no subject of greater interest and importance than this. Many of us are concerned with the necessity to do something to safeguard our patients in a hospital that is not fireproof or to decrease the capacity of our institutions to a point where they will cease to be useful. We cannot jeopardize life, especially where the victims are to be sick and helpless people. We cannot build new buildings over night, and we must do something about it. Dr. Peters' paper must help us.

Samuel Merritt Hospital, Oakland, California.

Some of San Francisco's Hospitals That Will Be of Interest to Visitors

THE SAMUEL MERRITT HOSPITAL

The Samuel Merritt Hospital is situated on about five acres of the east end of the block bounded by Hawthorne, Webster, Thirty-fourth and Elm streets, Oakland, California. The location commands an unobstructed view in every direction.

The original design is for the main hospital building, to consist of an administration building, facing the east, with two buildings upon each side, pavilion plan. At the present time, this administration building and one building of the south wing, or unit, are completed. The construction is of concrete, red brick and terra cotta, of two stories in height. The present capacity is 80 beds.

In addition to the plans for the main building there are plans for a maternity building, a building for children, a service building, and a building for contagious diseases.

The nurses' home, with a capacity for more than one hundred people, has already been constructed upon grounds in the rear of the present buildings, but does not show in the accompanying illustration.

ST. LUKE'S HOSPITAL, SAN FRANCISCO

St. Luke's Hospital is a general hospital and was organized in 1871 under the auspices of the Episcopal Church. It has always been recognized as one of the leading hospitals of this city, but was hampered in its work through lack of modern buildings until a few years ago three friends of the hospital, Mrs. Louis F. Monteagle, Mrs. Whitelaw Reid, and Mr. Ogden Mills, donated the money to build an entirely new plant and to equip it in a thoroughly up-to-date manner, so that it stands today not only an example of good architecture, but also the best example in this part of the country of a good hospital.

The new building is situated on the same property that was occupied by the old buildings. It is located in a part of San Francisco which is free, to a large extent, from the summer fogs, and is sheltered from the prevailing winds. As the hospital's holding of property is large, the patients have ample opportunity for being out of doors.

The frame of the building and the floors are of the best reinforced concrete construction, and the exterior walls are of brick. The exterior is finished in the Gothic style of architecture. The interior is arranged to accommodate 150 patients, and in construction conforms to the best standards of modern hospitals.

Fig. 1. St. Luke's Hospital, San Francisco. General view.

The building as a whole might be described as being composed of three U-shaped portions, joined together to make one building. Each of these sections is devoted to some distinct purpose. The largest and most important is devoted entirely to patients; it is so arranged that it opens to the south, so that all the wards and rooms have either a southern, easterly or westerly exposure. The north exposure of this section is devoted to the necessary work and accessory rooms. At the southerly end of each wing, on each floor, is a solarium, and on the roof of each is a roof garden.

The nurses are housed in a separate building of four stories, situated to the north of the main building. They have reception rooms, a tea room, library, lecture room, etc.

The accompanying pictures and floor plans give a good idea of both the general and detailed arrangement. All necessary departments have been provided for the care of general medical and surgical cases; and it is intended, as soon as possible, to increase the usefulness of the hospital by adding separate buildings for infectious cases, and for children and maternity cases.

The medical and surgical staff has always been composed of the leading medical men of the city, so that patients have been assured of the best of care.

ST. FRANCIS HOSPITAL, SAN FRANCISCO

The St. Francis Hospital of San Francisco was organized in 1904, the incorporators being physicians. A three-story and attic brick structure of what is known as the class "C" type, with a capacity of 65 beds, was erected in the Mission district and completed in November, 1905, at a cost of nearly $100,000.00, including equipment. The building was destroyed in the San Francisco fire of April, 1906, just five months after it was opened.

Like other citizens of San Francisco, the trustees were not discouraged by this calamity, and within a week the hospital was established in temporary quarters. Plans were soon made for rebuilding. A more central location was deemed advisable, and the construction of the new hospital at Bush and Hyde streets, within a few blocks of the center of the city, was started in 1909, and the hospital was opened in July, 1911. There are two detached buildings, one the hospital proper, with a capacity of 130 patients, the other a nurses' home of 50 rooms.

The hospital proper is a seven-story building, of brick and steel, entirely fireproof, of the class "A" type. The nurses' home is of the class "C" type.

In organizing the hospital and in erecting the new building the Board of Trustees has kept constantly in

Fig. 2. St. Luke's Hospital, San Francisco. Nurses' home.

mind the following special ideas, viz.:

First: The erection, in a convenient location, of a building large enough so that interested physicians could centralize their work, with a view to giving a maximum of service to their patients with a minimum effort.

Second: The erection of a building that would depart from standard ideas of hospital architecture, so as to eliminate as much as possible the institutional and hospital atmosphere without any great cost to patients.

Third: The development of the special facilities that add to a hospital's efficiency in the way of nursing, laboratory work, roentgenology, hydrotherapy, surgical equipment, etc.; and this to a degree that would be impossible under a management more or less hampered by lay control.

The first floor is given up to offices, reception rooms, dining rooms for nurses and employees, general and diet kitchens, and drug room.

The second, third and fourth floors of the hospital are devoted to private rooms. The rooms and corridors are equipped in the style of a first-class hotel, with the exception of the rear corridor, off of which the service rooms are located. The hospital appearance is subordinated to such extent as is consistent with the facilities necessary to care properly for patients.

The fifth floor is partly devoted to the operating section, which is very comprehensive, and partly to ward beds. In the latter an effort has been made to conform to the comfortable, homelike aspect so much in evidence on the other floors.

The sixth floor, which is being fitted up as a maternity section, has, in addition, sun rooms and roof gardens, from which a magnificent view may be had of the entire city. Over the center of this floor is erected a special class room for the training school, which is carried on into an eighth story.

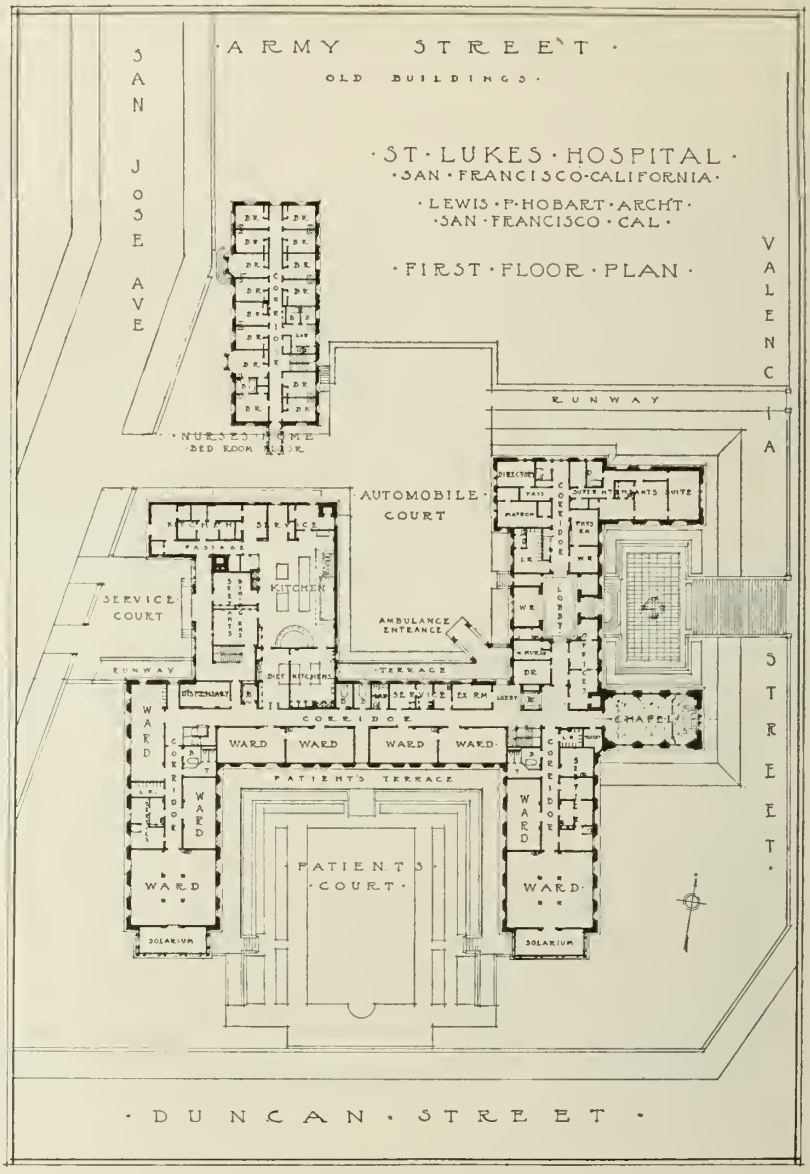


Fig. 4. St. Luke's Hospital, San Francisco. First floor plan.

Fig. 3. St. Luke's Hospital, San Francisco. One of the roof gardens.

The ground floor is almost entirely devoted to two departments, which are being specially featured by the trustees, namely, roentgenology and hydrotherapy, with an immense reception room, having a direct entrance from the street without going through the hospital proper. Seven rooms are devoted to roentgenology, the equipment installed including the latest and best apparatus for screen work, radiography and therapy, with a physician roentgenologist in charge who gives his entire time to the work. There are eighteen rooms in the hydrotherapy section, one-half for male and the other half for female patients.

Natural ventilation is used. The signal light system and the floor covering in the corridors are two adjuncts im-

portant in preventing noise. The location of the hospital, moreover, is on an elevation away from street car lines, so that it is notably quiet throughout.

In the nurses' home every room is an outside room. With two nurses to a room there are accommodations for over eighty nurses. In a wing recently erected in this building is a very large laboratory, with an animal house adjoining, under the direction of a pathologist and bacteriologist who gives his entire time to the section. There is handled here not only the regular work of the hospital, but research work. The facilities of the section are available for the personal use of interested physicians.

The entire plant, including buildings, grounds and equipment, represents an investment of nearly $500,000.

Fig. 1. Children's Hospital, San Francisco. Main building.

HOSPITAL FOR CHILDREN, SAN FRANCISCO

The hospital for children and the training school for nurses, more generally known as the Children's Hospital of San Francisco, comprises a group of eight buildings: the main or administration building, the Alexander maternity cottage and the contagious pavilion, which occupy the entire frontage of the block on California street, between Maple and Cherry streets; and the eye and ear, the "Little Jim" (orthopedic) buildings, and the nurses' home on Sacramento street, in the same block, each connected with the main building by a corridor. The hospital was originally organized in 1875 by women and physicians when no other hospital was open to them for clinical work, and was called by them the "Pacific Dispensary for Women and Children." It has passed through a series of evolutions, each of which has broadened its work.

Fig. 2. Children's Hospital, San Francisco. Eye and ear building at the right. "Little Jim" building in center. Nurses' home at left.

Fig. 3. Children's Hospital, San Francisco. Contagious pavilion.

Fig. 4. Children's Hospital, San Francisco. Alexander maternity cottage.

The main building, a fireproof structure, completed and opened in October, 1911, contains all of the administrative, pathological and drug departments. In the east wing of the building two floors are devoted to adult women patients, and the fourth floor to children's surgical cases. The receiving wards for children are on the first floor, entirely apart from the other patients. The operating rooms, of which there are three, two major and a minor, are on the fourth floor, and are fitted up with every modern appliance. The building has accommodations for 27 adult patients and 42 children.

The Alexander maternity cottage, as its name implies, is used entirely for obstetrical cases. It contains 12 private rooms and 6 ward beds; also the delivery room, two waiting rooms and two nurseries of 10 beds each.

The contagious pavilion, completed and opened in January, 1913, consists of four distinct departments, each a small hospital in itself: one for scarlet fever, one for diphtheria, one for measles and one for miscellaneous communicable diseases. Each contains a ward of four beds and three private rooms, besides the nurses' quarters, diet kitchens, etc.

The eye and ear building has one floor devoted to children's eye, ear, nose and throat cases, and has 18 beds. The upper floor is divided into 14 rooms for adult women patients. The building is circular, as is the "Little Jim" (orthopedic) building adjoining. The latter building consists of three circular wards of 20 beds each and is entirely for orthopedic cases, tubercular and non-tubercular.

The nurses' home, an addition to which has recently been completed at a cost of $23,000.00, has accommodations for 75 nurses. The rooms are bright, sunny and attractive. The home contains also a "study" room and a reception room.

Besides these there is a remodeled building occupied by the female help, and another building recently completed for the male help. The rooms in these, as in all the buildings, are steam heated and lighted with electricity, and are very comfortable.

ST. MARY'S HOSPITAL, HAYES AND STANYAN STREETS, SAN FRANCISCO, CONDUCTED BY SISTERS OF MERCY

The completed portion of the group consists of the central section and the east wing. The framework is of steel, with reinforced concrete filling. The entire building is, as far as possible, proof against fire and earthquake. The

Fig. 1. St. Mary's Hospital, San Francisco. Major operating room.

main corridor on each floor measures 256 feet, and that of each wing 147 feet.

As the building faces south, the rooms and wards are flooded with sunlight. The northern portion is reserved for service rooms. On each floor are large circular sun rooms, for the convalescent.

A most attractive feature is the roof garden, which extends over the entire building, and is reached by an elevator large enough to carry a patient even in his bed.

In rear of the main structure and attached to it is a two-story building of solid reinforced concrete, for the accommodation of kitchens, tray rooms, dining rooms and power house.

The surgery, a most important department, is situated in the northwest section of the fifth floor. The operating

Fig. 2. St. Mary's Hospital, San Francisco. Electrically heated tray carriers.

rooms, five in number, are tiled from floor to ceiling, the latter being finished in Keene's cement with a coating of oil paint. This style of finish facilitates keeping the rooms as aseptic as possible. The northern walls of the major rooms are of ground glass, admitting perfect light. Not the slightest shadow can be detected in any part of these rooms during morning hours; artificial light is therefore unnecessary.

The furniture, appliances, etc., are all of most modern design, and to the already complete stock of instruments is added each new one as it appears on the market. The indirect ventilating system, with its special heating coils, makes it possible to keep a uniform temperature, with eight changes of pure dust-free air per hour. Sinks, hoppers, etc., are of vitreous ware, impervious to acid solutions. The "wash-ups," with their triple Ainsworth sinks and supply of sterile water, conveyed in special brass tin-lined pipes, deserve mention.

The pathological department is one of the largest and best appointed of its kind. The main laboratory measures 32 feet by 18 feet, and has a tiled floor and white enamel woodwork. It contains a complete outfit of apparatus for chemical, bacteriological and pathological examinations.

The x-ray department is under the supervision of Dr. George L. Painter and is equipped with the very latest and best apparatus. The department is thus prepared to do all kinds of radiologic work, both therapeutic and radiographic, special accessories being provided for instantaneous and stereoscopic exposure of all parts of the body.

On the first floor is the hydrotherapeutic department, completely equipped with every modern appliance de-

Fig. 3. St. Mary's Hospital, San Francisco. Laboratory.

manded for work in this line. Its efficiency has been proven by the gratifying results of treatment therein.

The pharmacy, under the care of two Sisters, both graduate pharmacists of the University of California, is well stocked with chemicals and pharmaceuticals. An electric elevator of suitable dimensions conveys all medicines directly from the pharmacy to their respective destinations.

Adjoining the morgue is a well equipped autopsy room, at the service of all visiting physicians.

Fig. 4. St. Mary's Hospital, San Francisco. Diet kitchen.

UNIVERSITY OF CALIFORNIA HOSPITAL

Ground has been broken for the Hospital of the University of California and construction has been commenced. This building is to be built on a magnificent site which overlooks the Golden Gate and the ocean. The four ward pavilions, which are connected with and extend back from the upper two floors of the four divisions shown in this cut, open up directly on a hillside, which is in the rear.

The receiving and mechanical departments, including power and heating plants, are on the first floor, as is also

Fig. 5. St. Mary's Hospital, San Francisco. Contemplated building.

the wash room of the laundry. On the second floor there are more store rooms; also the finishing department of the laundry, the linen store room, the kitchen and dining rooms, and the ambulance entrance. The third floor is the administration floor and is particularly interesting on account of the fact that it has a suite of offices for each one of the professors of medicine, surgery, gynecology and pediatrics. On the third floor is the operating suite, which comprises five main operating rooms and two small operating rooms, as well as recovery rooms, and other necessary departments and rooms usually associated with surgical departments. In the wing, which extends back from the west end of the building, are the quarters for the intern staff. In this same wing, and on the floor above this same floor are large laboratories. On the fifth floor are located the photographic and x-ray departments and the drug department, as well as quarters for some of the women members of the medical staff. On this x-ray floor the spaces which are located over the operating room are to be utilized for store rooms for various departments of the hospital. In the rear of the west wing on this floor we have an isolation department. The capacity of the entire plant will be 216 beds, and it will be so built that further additions can be made, enlarging the capacity to 400. It is expected that before many months have passed we shall be able to begin the construction of a very much needed nurses' home, as well as a private room building. A short distance in the rear of the wards of the new hospital a large pathological building will before long be erected.

The Hooper Foundation, which is part of the University of California, is located in a three-story building in the rear of our present hospital, and at the commencement of the present year started in with its research work.

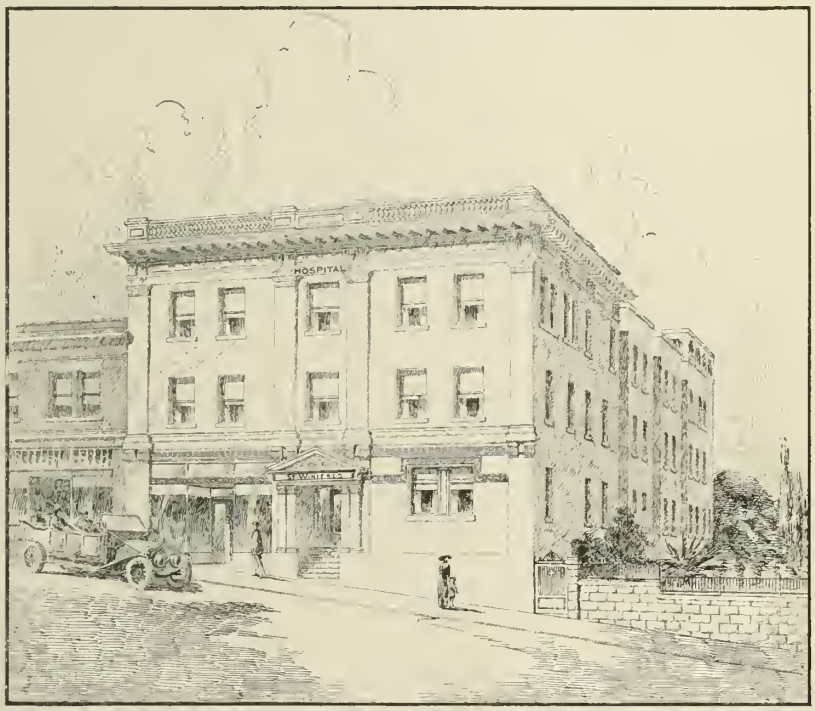
ST. WINIFRED'S HOSPITAL, SAN FRANCISCO

The new St. Winifred's Hospital is centrally located at 1065 Sutter street, San Francisco, and is built of reinforced concrete.

The operating rooms are fully equipped with all modern diagnostic appliances, apparatus of every kind, and surgical instruments for scientific, operative and emergency work.

The hospital is a general hospital; no contagious diseases are treated. The number of beds is between 40 and 50.

St. Winifred's Hospital has always had a first-class training school for nurses; it consists of 25 pupil and four graduate nurses.



St. Winifred's Hospital, San Francisco.

Maryland Opens New Hospital for the Insane

The first group of buildings of the Eastern Shore State Hospital for the Insane, at Cambridge, Md., has been completed.

The group consists of a main hall, laundry and power house. The main hall is 300 feet long and 165 feet wide. It is two stories high and has a cellar under the whole building. The first floor is divided into an eastern and western wing. One of these wings will be occupied by men and the other by women. The kitchen is situated between the two wings and in each wing are three dining rooms. The serving rooms for each dining room are connected with the kitchen by wide corridors. The second floor of the men's hall building contains four dormitories, with a hospital room in each wing. There are also sixteen private rooms for nurses and attendants.

All the buildings are constructed of rough brick, laid in Flemish bond, with tooled joints. The second story of the main building is finished in rough cast mortar in English timbered effect. The roof is slate, laid on a four-inch concrete base.

All the floor construction is of reinforced concrete and the finished floors on the first story are laid in Welsh tile. The vestibules, toilets and bath rooms in the second story are laid in terrace tile. The floors of the dormitories are soft grain Georgia pine. On the inside the walls of the men's hall are finished in salt-glazed brick and the ceilings are plastered and white coated.

The new hospital in its present state represents an expenditure of $300,000. As the needs increase and more money becomes available six additional dormitories and an administration building will be erected.

CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General United States Army.

The Emergency Hospital of the Panama Pacific Exposition. Rell M. Woodward, Surgeon U. S. Public Health Service. The Military Surgeon, XXXVI, No. 4.

Dr. Woodward has been assigned by the Surgeon General of the United States Public Health Service to take charge of this hospital. It has been largely equipped by donations or loans from various manufacturers, and will be open for inspection to all physicians, superintendents, nurses, pharmacists and others interested in hospital construction and management.

Liverpool Field Hospital. Lancet, London, 1915, I, No. 9.

This hospital will provide accommodation for 230 patients besides the staff and administration. Upwards of $12,000 have been spent on its equipment and maintenance. Monthly subscriptions have been promised for its support for periods varying from six months to the entire duration of the war. The staff of medical officers, x-ray specialists, paymaster, dispenser, matron, assistant matron, forty-one sisters, nurses, ward maids and forty-one orderlies all come from Liverpool.

The Pastorino Hospital at Bolzaneto (L' ospedale "Pastorino" a Bolzaneto). Rivista ospedal., Roma, 1915, VI, No. 1.

This hospital owes its existence to the benevolent spirit of Carlo Pastorino, who donated his own castle at Bolzaneto near Genoa for a hospital, providing at the same time the means for transforming the building. The hospital is intended to take care of the poor sick of the community and of workmen who have suffered injuries from accidents during their work. The donor also provided for an annual income of 12,000 francs; the additional expenses are to be borne by the community.

The Bologna Provincial Seaside Hospital at Rimini (L' ospicio marino provinciale balognese in Rimini). G. Marcovigi. Rivista di ingegneria san., Torino, 1915, XI, No. 1.

The efficacy of marine treatment for scrofulous children has been amply proved by the numerous seaside sanatoriums established by the various countries. With few exceptions the Italians have so far contented themselves with structures of the barracks type. But it is now coming to be recognized that these old establishments are not up to modern standards and cannot conform to the principles of modern hygiene. For this reason substantial and permanent structures are gradually taking the place of the old ones. The Province of Bologna has just opened such an institution for scrofulous children on the Adriatic coast near the city of Rimini. The grounds acquired from the latter extend 500 meters along the beach and are 50 meters wide. The sanatorium consists of a central administration building, ten pavilions, an isolation pavilion, a chapel, laundry and other minor buildings. All pavilions are of two stories, with the exception of two dormitories for boys and two for girls, which contain three stories. The institution is open all the year around, and boys as well as girls are admitted.

British Hospital for Mothers and Babies. Lancet, London, 1915, I, No. 10.

The British Lying-in Hospital, Endell St., and the Home for Mothers and Babies at Woolwich have been amalgamated. The new charity has purchased the freehold of a site at Woolwich, about three acres in extent, on which they contemplate building a hospital in the near future. This hospital will receive not only lying-in patients, but also those suffering from any complications relating to maternity, either before or after childbirth. It is to be known as the "British Hospital for Mothers and Babies" and will serve as a national training school for district midwives.

Syphilis—Its Modern Status From the Standpoint of the "Internist." W. M. Donald, M. D., Journal of Michigan State Medical Society, XIV, No. 4.

Dr. Donald believes that every hospital should have a ward devoted to the syphilitic in their openly infectious stages, and that there should be no more danger of contagion in a hospital from a syphilitic in this stage than from a patient suffering from typhoid fever, pneumonia or tuberculosis. Hospital care and segregation should maintain immunity for the other occupants of the institution, and the doctor strongly advocates that syphilitics should be encouraged to go to the hospital for treatment on the first evidence of the disease and remain until saturation with arsenic and mercury is complete.

A Night Sanatorium for Sickly School Children (Nachterholungsstätte fur kränkliche Schulkinder). G. Gohde. Zeitschr. f. Schulgesundheitspfl., Leipzig, 1914, XXVII, No. 4.

The city of Duisburg in western Prussia has established a night sanatorium for sickly school children. The children pass only dinner time at home to keep in touch with their parents. With the exception of dinner they take their meals at the sanatorium. After the afternoon instruction the children go to the sanatorium, where they are given a lunch and then pass the remainder of the day in the park with play and exercise. A large, open hall is provided for the same purpose during rainy weather. After an ample supper the children are put to bed. On Sundays the children are dismissed at 10:30 a. m. to attend church service. The institution has room for 60 children. Not only sickly children are received, but also those of tuberculous parents, to prevent their being infected. The children who live at a distance receive free street-car transportation. A similar institution has also been established at Waldenburg, Silesia.

Plans for the Tuberculosis Hospital at Garbagnate (Il progetto per il tubercolosario di Garbagnate). Rivista ospedal., Roma, 1915, VI, No. 1.

The plans were drawn up by Architect Ferrini with a view to completing separation of the divisions for male and female patients, and with the possibility in mind of subdividing each division in wards for advanced cases and less seriously sick patients. The hospital is to consist of: (1) a central building of two stories containing the administrative offices, the pharmacy, a hydrotherapeutic

room, baths and the habitations of the director, assistant physicians and nurses; (2) two pavilions for male and two for female patients; (3) a building containing the store rooms, the kitchen, a chapel and rooms for the servants and other employees; (4) two large sheds for open-air treatment; (5) a mortuary with two small annexes, one an autopsy room, the other a small bacteriological laboratory; (6) a barn with stable and carriage shed. The four pavilions are ranged in one straight line. The two pavilions of each sex are connected by a large hall open toward the south, where the patients can gather during bad weather, when staying on the verandas would be unpleasant. The two pavilions farthest from the central building are to be occupied by advanced cases of tuberculosis. The pavilions have verandas on the north as well as on the south side.

The Auxiliary Hospital of the French Institute (Hospital auxiliaire de l' Institut). Dr. L. Landouzy. Comptes rendus Acad. des sciences, Paris, 1914, CLIX, No. 14.

The Institute of France established a hospital in the Hotel Thiers in Paris for wounded soldiers of the present war. The hospital is splendidly equipped and provided with all the modern improvements and conveniences. The surgical work is in the hands of the celebrated Dr. Broca, while the medical part is managed by Dr. Troisier. Drs. Landouzy and Labbé are in charge of the administrative work. The hospital was opened September 21, and has since been very successful. Experience in this hospital has shown that bullets from rifles and machine guns are usually aseptic and rarely cause gangrene or tetanus. The most dangerous projectiles are fragments of shells and shrapnel balls. They cause large, tearing wounds and tetanus is quite frequent.

A Few Remarks on Hospital Construction (Ein Wort zum Krankenhausbau). R. Weber, Architect, Heilanstalt, Leipzig, 1915, X, No. 1.

It is a fact that the building of a hospital has become an expensive undertaking. Small towns which are in need of new hospital buildings fear the great expense and content themselves with old hospitals which are entirely out of date and remain far below the demands of modern hygienic principles. One of the reasons for this condition is the fact that the architects employed by small towns draw up their plans after the luxurious hospitals of the great cities, which is entirely out of place in the case of a small hospital. Frequently, too, the architects completely lack the knowledge of the management, inner workings, and needs of a hospital, and thus cause expenses which are entirely unnecessary. Only specialists in the field of hospital construction who are thoroughly familiar with all questions concerning hospitals are able to keep the building costs within reasonable limits and to avoid all unnecessary expenses. The author describes in detail the plans of two small hospitals, one for 164, the other for 24 beds. He calculates the expenses of the former at 3980 Mk. ($995.00) and the latter at 3800 Mk. ($950.00) per bed.

The Demographic Results of the Antitubercular Dispensaries in France (I risultati demografici dei dispensari antitubercolari in Francia). E. Bertarelli. Rassegna sanitaria, Roma, 1914, XII, No. 39.

The antitubercular dispensaries in France have not been established longer than ten or twelve years ago. But even during this short period they have accomplished a great work. The author considers only the dispensaries at Lille, Lyons and Paris, because they have been the most efficient. The first antitubercular dispensary in France was established at Lille in 1901 through the efforts of Dr. Calmette. The influence of this dispensary on the mortality from pulmonary tuberculosis is striking. From 1896 to 1900, when there was no dispensary at Lille, the average annual mortality was 833. From 1906 to 1910 the average number of deaths from pulmonary tuberculosis was only 683, though the population had in the meantime increased from 205,600 to 217,800. Similar are the results of the dispensary at Lyons, a city of 600,000 inhabitants. The dispensary was established by the city in 1905. During the last seven years it has assisted 3,000 families, it has disinfected 1,600 dwellings where tuberculous persons had lived; it has sent 27,000 children to the country and given more than 9,000 professional consultations, and all this at a cost of only 35,000 francs ($8,750) per year. In 1900 the mortality from tuberculosis was 37.2 per 10,000 inhabitants; in 1911 it had sunk to 26.1.

In Paris there are a number of antitubercular dispensaries in different parts of the city, but no general statistics are available. The best work was done by the Leon Bourgeois Dispensary, established in 1907. During the last two and one-half years 20,000 professional visits were made; 33,000 francs were distributed among needy patients, and more than 1,000 children were removed from their surroundings, where they were in danger of being infected. Another dispensary, located in a part of the city exclusively inhabited by workingmen, shows remarkable results. In 1900 the mortality from tuberculosis in this part of the city was 90.9 per 10,000 inhabitants; in 1912 it had fallen to 46.3.

Endowment School for Nurses. Dr. Henry M. Hurd, in Johns Hopkins Nurses' Alumnæ Magazine.

Dr. Hurd thinks there should be a preliminary or preparatory school for nurses in which they should be firmly grounded in such fundamental branches as ethics, hygiene, sanitation, anatomy, physiology, bacteriology, chemistry, household economics, dietetics and elementary nursing, all of which should be given before the student assumes responsibility for the actual care of the sick. Dr. Hurd does not think such a school could be self-supporting; rather it should be an expensive institution to conduct. He is quite sure that such a school must be endowed in a large way by some person who would have a broad outlook, if the nurses of the future are to acquire a "profession and not a trade."

The Origin of the Red Cross. Mary Buob, Spokane, Wash. The Pacific Coast Journal of Nursing, Feb., 1915.

In these times, when the whole world is interested in the goings-on of the battle field, an authoritative description of the founding and progress of the International Red Cross Society seems most opportune. The author has most interestingly described the society, from its foundation by Henri Dunant, a Swiss gentleman, in 1859, to the present American Red Cross, founded by Miss Clara Barton in 1881.

The Cockroach. Journal of the Iowa State Medical Society, Feb. 15, 1915.

An editorial comments on an article in the September number of the American Journal of Tropical Diseases, which maintains that the mosquito, fly and flea must divide honors with the cockroach as an enemy of mankind. "It is found that the cockroach carries on its legs colonies of bacillus coli, staphylococci, and bacilli of various kinds,

also that it is possible to cultivate from its intestinal tract the bacillus of diphtheria, bacillus pyocyaneus, pneumococcus and meningococcus in undiminished virulence. Also it carries in its stomach organisms which when taken into the stomach of white mice rapidly develop cancer by irritation." "Swat the roach," seems to be the logical slogan for all hospitals.

Are Nurses Not to Be Nurses? Editorial, New York Medical Journal, March 13, 1915.

The writer thinks that the new bill recently presented in the New York Legislature proposes to "amend the English language through legislative enactment" by restricting the use of the word "nurse" to those registered by the State Board. After defeat of a similar bill a year ago, the Journal thinks that the authors of the proposed legislation are hoping to crystallize their action into law by a bill which is "either very loosely or very skillfully drawn." Some of its terms are ambiguous and obscure. The only point on which the bill is quite definite is the provision for a salary of $2,500 for secretary of the proposed board of examiners; and careful inquiry would probably develop the fact that the bill was drawn to provide a soft berth for some nurse of political ability. The Journal thinks "this measure will probably meet with vigorous opposition from the medical profession."

The Radium Institute of London. A report of the work for 1914, by A. E. Hayward Pinch, Medical Superintendent. British Medical Journal, February 27, 1915.

Eight hundred and forty-one cases were treated, of which 50 were apparently cured, 19 actually cured, 328 improved and 28 died. In 136 cases there has been no report as yet. The report discusses the apparatus employed and the methods used, and discusses each class of cases separately: cancers in various parts of the body, rodent ulcers, adenoma of the thyroid, fibroid disease of the uterus, nævus, tuberculosis and various skin diseases such as keloids, lupus and pruritus. The report dwells on the excellent results attending the employment of radium emanations in arthritis deformans. In these cases the more acute ones reacted best and the applications were found not to destroy cartilaginous or osseous growths.

Hospitals and Charitable Aid in New Zealand. Report on Public Health for 1914. The Hospital (London), February 13, 1915.

The article gives forms of raising funds for the building and support of hospitals in New Zealand, and compares these with similar methods in Australia. Most of the hospitals in Australia are dependent on the various state governments for their funds and are under state control. In New Zealand there is joint municipal and state control and for the purpose the islands are divided into thirty-six districts in charge of a Hospital and Charitable Aid Board, composed of from eight to twenty members. Some of these members are merely prominent people in the community, but usually they have associated with them some expert institution administrator to advise with them as to approved methods of operation.

Missouri's Mental Defectives. G. Wilse Robinson, M. D., Journal Missouri State Medical Association, March, 1915.

The writer gives a long list of families of mental defectives who are perpetuated by intermarriage, and draws attention to the probability that criminals, alcoholics, prostitutes, paupers and truants will not cease in this country until known defectives are placed in institutions and prevented from transmitting their characteristics to future generations. The paper gives some interesting stories of well known defective families running through many generations.

How Should the Surgeon Be Gowned in the Operating Room? By Francis Reder, M. D., St. Louis, Mo. American Jour. of Surgery, December, 1914.

"Will someone please wipe my face?" Dr. Reder writes very strongly on the subject of the proper gown for the surgeon in his work. The necessary parts of his attire should be: for the head a piece of gauze, not less than six thicknesses, with a width of about four inches, long enough to encircle the head. A similar bandage should cover the chin, mouth (and nose if desired) and the cheeks—an operating room cap. For the body, a medium heavy shirt of cotton fabric, duck trousers and duck shoes with rubber soles. This constitutes an attire that is above criticism, and is neither too hot nor uncomfortably bulky.

"Dust." By J. A. Guthrie, M. D., Savannah, Ga., Medical Review of Reviews, February, 1915.

When we breathe into our lungs one of the pests of humanity, called "disease germs," it is as a drop of water opposed to a great conflagration, but let us take a sufficiet number of drops, and the conflagration realizes an antagonist. Dr. Guthrie believes that the old methods of sweeping and dry dusting are responsible for most of the cases of tuberculosis in the world, and praises the inventors of vacuum cleaners. He thinks that it should be a national law that nothing whatever be recklessly thrown on a street, and that any person allowing debris and filth to remain on the sidewalk in front of his or her property for a stated time should be fined, and the person or persons permitting or responsible for same should be reported to the authorities for immediate punishment. Applying this to hospitals and similar institutions Dr. Guthrie infers that no dust should be stirred up in the hospital at all.

Physical Training for Nurses. Leonhard Felix Fuld, LL. M., Ph. D., Member American Academy of Physical Education. The Trained Nurse and Hospital Review, February, 1915.

Dr. Fuld is writing a most interesting series of articles on physical culture for nurses, and in the February number of *The Trained Nurse* he illustrates different exercises obtained by a systematic method of putting on the shoes, which develops the muscles of the leg and maintains a proper and attractive carriage.

Chicago Plan for Municipal Control of Tuberculosis. A Chicago Municipal Tuberculosis Sanatorium and Its Auxiliary Agencies. Theodore B. Sachs, M. D., Ill. Med. Jour., Feb., 1915.

There is presented a description in epitome with illustrations of the new Municipal Tuberculosis Sanatorium at Chicago. The sanatorium occupies 160 acres of ground in the northwest suburbs of the city, about six miles from the business center. There have already been completed cottages, dormitories and service buildings, and bed space for about 600 patients, the service units to take care of about 900 eventually. The cost for the 600 patients has been $2,400,000, or approximately $4,000 a bed. The cottages are of wood without windows on the south side; the main buildings are of concrete and brick, most of them two stories high, with half-basement; in the infirmary part the buildings are three stories with half-basement.

INDEX OF HOSPITAL AND SANATORIUM LITERATURE

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In ancient Greece, after the organization of the various schools of medicine, when the art of healing the sick was no longer a monopoly of the priesthood, if a patient considered the fee charged for a physician's services exorbitant, he was at liberty to apply to a tribunal instituted by the government for the purpose of settling questions of charge. The doctor was forced to accept whatever fee this tribunal considered fair and just, and when two or more appeals were made against the same physician, he was cast into prison as a felon and was forbidden ever after to practice medicine.

The first privately endowed hospital of which there is any authentic record was founded in Florence by Falco Portinari, father of Dante's Beatrice. It was called the Santa Maria Annunziata. The second was founded in Milan by the Duke Francesco Sforza.

DEPARTMENT OF NURSING

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The American Nurses' Association Convention

We are very grateful to the *American Journal of Nursing*, which has kindly permitted us to condense from its columns, for the benefit of nurses reading THE MODERN HOSPITAL, the following announcements in regard to the eighteenth annual meeting of the American Nurses' Association, which is to be held in San Francisco June 20 to 27, 1915, inclusive:

Trains carrying nurses from the East are scheduled to leave New York at 12 noon on Wednesday, June 9, and go by way of Buffalo and Detroit to Chicago, arriving there Thursday at 3 p. m., and leaving at 10:30 p. m. over the Atchison, Topeka & Santa Fe Railroad; all meals included in this trip as far as the Grand Canyon are at Fred Harvey's restaurants. The route follows through New Mexico and Arizona, arriving at Grand Canyon on Sunday, June 13, at 6:50 a. m. and leaving there the same day at 8 p. m. This trip includes a visit to Riverside, Cal., and a drive to Mt. Rubidoux, with dinner at the renowned Mission Inn. There are other attractions at Riverside, notably an organ recital almost every evening. Leaving Riverside at midnight on June 14 the train arrives at Los Angeles at 7 a. m. Tuesday, June 15; it leaves there at midnight of the same day, with a number of interesting side trips during the day, and arrives at San Diego Wednesday, June 16, where time will be given for admission to the Panama-California Exposition. The return from there to Los Angeles is at midnight, and again the day is spent at Los Angeles. Train leaves Los Angeles at 8 p. m. Thursday by way of the Southern Pacific Railroad and arrives at the Yosemite National Park early Saturday, June 19. It leaves this place at about half-past seven in the evening and arrives at San Francisco Sunday, June 20, which is the day appointed for the opening of the convention.

The program is not yet sufficiently complete to publish, but will probably be found in a later edition of the *American Journal of Nursing*, which, as all nurses know, is the official organ of the great nursing organization in this country.

The time between Sunday, June 20, and Sunday, June 27, will be occupied with the meetings of the convention, which give every promise of being exceedingly interesting.

The American Hospital Association has accepted an invitation to be the guest of the American Nurses' Association at a meeting in the Greek Theater, Berkeley, on the afternoon of Wednesday, June 24. The use of the theater was granted the American Nurses' Association by the trustees of the University of California. There is also to be a meeting on Tuesday evening in charge of the National League of Nursing Education in beautiful Festival Hall on the Exposition grounds.

The itinerary for the return trip at the close of the convention leads the traveler through Salt Lake City, through the famous Colorado Rocky scenery, through the Tennessee Pass, Marshall Pass, the Canyons of Grand and Eagle Rivers, through Leadville, one of the greatest mining camps combined with a modern city; Colorado Springs, which is reached at 5 p. m. on Wednesday, June 30, leaving there about 11 a. m. Thursday for Denver; leaving Denver at 9 p. m. Thursday, by way of the Rock Island Lines, passing through Nebraska, making a short stop at Omaha, and arriving at Chicago at 8 a. m. Saturday, July 3; continuing from Chicago at 3:30 p. m. by way of Niagara Falls, where a stop of several hours is made, and arriving at New York at 8 a. m. Monday, July 5.

INCLUSIVE FARES

	With lower berth in Tourist Sleeping Car	With upper berth in Tourist Sleeping Car	With lower berth in Standard Sleeping Car	With upper berth in Standard Sleeping Car
New York	$229.00	$223.00	$249.00	$240.00
Boston	235.00	229.00	255.00	246.00
Philadelphia	227.50	221.50	247.50	238.50
Baltimore	231.90	225.90	251.90	242.90
Washington	233.90	227.90	253.90	244.90
Easton	227.50	221.50	247.50	239.50
Wilkes-Barre	226.50	220.50	246.50	237.50
Ithaca	221.50	215.50	241.50	232.50
Rochester	219.00	213.00	239.00	230.00
Buffalo	216.00	210.00	236.00	227.00
Toronto	218.50	212.50	238.50	229.50
Montreal	235.00	229.00	255.00	246.00
Detroit	200.00	194.00	220.00	212.00
Lansing	198.00	192.00	218.00	210.00
Battle Creek	196.00	190.00	216.00	208.00
Chicago	178.00	172.00	197.00	189.00
Kansas City and return to Omaha.	164.00	158.00	181.50	172.50

Including Yosemite Valley, as outlined in the itinerary, costs $30.50 additional, based on a party of one hundred.

These rates include the following:

Transportation. First-class for the entire tour, limited to September 9, 1915, with many stop-over privileges.

Sleeping Car Accommodations. One double berth for each passenger.

Hotels. Accommodations at first-class hotels.

Meals. All meals, excepting while at San Francisco.

Sightseeing. Sightseeing trips as specified in the itinerary.

Transfers. Of passengers to and from hotels, where necessary.

Baggage. 150 pounds of baggage transported free on each ticket.

Deposit. To secure accommodations and membership on this tour a deposit of $25.00 is necessary, which is credited to the amount of the tour, balance of which is due on May 9, 1915. Reservations are made in the order in which deposits are received, hence early remittance is advisable. All deposits and amounts paid will be refunded to those unable to join the party, providing notice is received by June 1.

Optional Side Trips. Lake Tahoe. Visited on return journey at $7.00 additional, including one day's accommodations, with meals at Tahoe Tavern, and necessary transportation.

Yellowstone Park. As a side trip from Salt Lake City will cost $53.50 additional for complete five-day tour of Park, including transportation, stage fares, all meals and hotel accommodations. Four-day tour costs $44.50.

Panama Canal, Canadian Rockies, and other return routes.

Those desiring to return via other routes or points or to make longer stays in California, accompanying the tour

as far as San Francisco, can receive full information relative to rates, schedules, etc., on application to Frank Tourist Company, 398 Broadway, New York.

There is another trip called the direct trip to California, with one or two short stops, the rates for which are given as follows:

RATES

Transportation.

Round-trip tickets, New York to San Francisco, limited to three months, going via above route and returning same route, or any other direct route	$94.30
If return route includes Portland, Canadian Pacific, Great Northern or Northern Pacific, or Grand Trunk Pacific, the additional cost will be..	17.50
If return route includes Grand Canyon, additional cost	7.50
If return route includes Pennsylvania or New York Central Railroads, additional cost	2.25

Berths.

New York to San Francisco, lower, in Standard Pullman sleeping cars	18.00
New York to San Francisco, upper, in Standard Pullman sleeping cars	14.40

Hotel Clift, Gerry and Taylor streets, is to be considered the headquarters of the Association, and arrangements may be made for rates at this hotel while in San Francisco, but application must be made early inasmuch as many reservations are being made and hotels will be greatly crowded during June.

Nurses desiring other information may obtain it by application to the Chairman of the Transportation Committee, Mrs. C. V. Twiss, 419 West 144th street, New York.

The Head Nurse

In order that the work of the hospital may be facilitated, it is necessary that system be adopted and routine be established in the wards. Consequently it is necessary to appoint someone to the oversight of all ward work; and she bears the title of head nurse.

Her duties are many and varied, her responsibilities great, and her opportunities great also in proportion. Next to the superintendent of nurses and her immediate assistants, she is the one to whom the pupils cast their eyes for example and precedent to guide their own conduct and methods of work. Possibly no influence upon the training school, certainly none upon the individual members, is more potent than that of the head nurse. The ambitious head nurse has no occasion to think her sphere specially limited and herself but a small factor in the great whole. Her close relationship with individual members of the school makes it impossible that this should be so.

"As the twig is bent, the tree is inclined"; therefore her teaching may make or mar the fortunes of any individual nurse who comes within its range. Example in conduct and work even in small matters can never be considered trivial, since it is constantly being interwoven in the lives and work of others, and the acts of loyalty, industry, fidelity and self-control, which she daily exemplifies, will be found repeated in those who have been under her instruction. Certainly this cannot be called a restricted sphere.

She must not, then, be dissatisfied with her so-called limitations; nor can she hope to escape judgment if her example and teaching are not such as should naturally be productive of good.

Since her duties and responsibilities are so varied and since her example and instruction are so far-reaching, her qualifications must be equal to the demands made upon them. She must be in a measure possessed of those attributes which are found so essential to the character of her superintendent and which are often heard summed up in the one word with whose sound all are quite familiar and of which some must be a little weary; it has no synonym, however, therefore there must be a constantly increasing respect for it. Webster defines it as "that ready power of appreciating and doing what is required by circumstances"—namely, tact.

The head nurse's education must also be of the active, practical kind, and if she has been fortunate in her earlier preparation for it, by just so much—other things being always equal—will her present work be benefited as well as those who come under her influence.

Besides being a thoroughly trained nurse, she should have some practical knowledge of housekeeping that she may better adjust her ward work for the accomplishment of the greatest amount with the least expenditure of time and force.

Since she is directly responsible for the welfare of the ward and the patients, and since the best results are obtained by that means, she should be allowed to superintend or rather, it might be better to say, oversee all work in the ward, including that of ward maid and orderly. Now, in doing this she must maintain the traditions and long-established precedents of the hospital, lest confusion may arise in the minds of the pupil nurses and inefficient work result, as well as lack of uniformity in the work of different wards.

The head nurse of one ward may adhere strictly to all rules and regulations save possibly one. Another head nurse likewise may omit to keep one particular rule, and so on all through the list, no two failing on the same point and yet possibly no one keeping all rules. It is readily seen that a pupil nurse who runs the gamut of many head nurses must in the end have a very hazy idea of the best methods of doing ward work.

Too strong a plea cannot be made for hospital regulations, the maintenance of which devolves principally upon the head nurse. They were conceived in necessity and owe their whole existence to necessity; they have lived and been transmitted of necessity, and whether or not their value is fully understood, tampering with them results grievously, and their remission certainly invites calamity.

Perhaps one of the hardest duties and severest strains upon the head nurse is the constant demand upon her for interest and animation at all times in the work of the ward. That she should possess and exert an interest is absolutely necessary in order that it may never flag in her assistants, who must obtain it largely from her. Nothing is more infectious than animation and interest in one's work, except possibly the opposite. Associate workers very soon catch the spirit which bodes good or ill for any particular work, especially in such work as that of the nurse. If a head nurse is indifferent, assistants will also be indifferent. If she is full of interest and sympathy, so will they be. From the examples of her valor do they gather their inspiration.

To attempt to classify or even to list the most imperative of her duties would be almost out of the question. "They are as many as the tiles upon the roofs of the houses;" they are legion.

The patients' comfort and general well-being are always of first importance, and that these may be secured certain primary items must be considered. They are called primary items because they form the foundation upon which comfort and well-being must rest—they are such as warmth, ventilation, cleanliness, diet and general discipline. The reason these points have assumed such importance is found in the fact that in these days of medicine and surgery they have come to be depended upon as

the means which, when properly considered, lead to the patients' ultimate recovery. At least the failure thus properly to consider them leads to the opposite. They are almost entirely in the hands of the nurse, another evidence of the importance of her work.

They cannot be dwelt upon at length here, but a word must be said for some of them. Now that the germ theory of disease is so well established, however, and that germs do not live and multiply where there is fresh air and absolute cleanliness, no argument for ventilation and cleanliness is required.

A patient's diet lies very near his medical treatment, and any failure in the technic of feeding may frustrate the ends of all the previous medical and surgical care, hence its importance.

By general discipline is meant just enough control and direction of the affairs of individual patients to insure the happiness of each by not permitting him to decide matters for himself, regardless of the welfare of his neighbors. To this end certain rules are enacted for the control of the ward. For instance, patients must retire at a certain hour; they must also receive treatment at certain times, take their food at another time, and so on. Evidently this so-called discipline is by no means of minor importance in connection with the other primary items.

In order that this may be accomplished, the head nurse must make a division of nursing work among the assistant nurses. This division may be made according to any method in vogue in the training school. In some schools it is customary for the head nurse to divide the patients among her assistants—making each assistant nurse responsible for the whole nursing care of her own patients. In other schools the work, instead of the patients, is divided among the assistants and one nurse is held responsible for the taking of temperatures and keeping of charts, another for the diets, and so on; the sweeping and dusting generally falling to the junior nurse. This method may possibly produce better results in housekeeping and charting, though even that point may be disputed, but it certainly cannot produce better nursing care for the sick. The assistant nurse who has the whole care of her own patients must have a greater interest in them and in her work than if she were merely recording their temperatures or making their beds or serving their diets. Moreover, she must study to some extent their foibles and weaknesses and consequently be better able to anticipate their needs and think and act for them, by which means she will be a tower of strength to them. Again, if the time comes, as in private duty, when the nurse must assume the whole care of a patient, she will not be unfamiliar with the general routine. Whatever method of division of work obtains, it follows that this work must be directed, inspected, and if necessary, criticised; upon the wisdom and certainty of the criticism does much of the success of the ward depend. This certainty simply means that the head nurse is on record as unwilling to accept any but the best work.

Besides the division of the work among assistant nurses it usually falls to the lot of the head nurse to apportion that of the orderlies. In most hospitals this does not assume a great degree of importance. Orderlies generally do the work which is sometimes assigned to porters. They do, in such instances, some of the minor nursing work in male wards; but they frequently care for the floors, wash windows, etc., as well. Whatever may be the character of their work, it still remains for the head nurse to direct it; and its character must depend upon the character of the contract the hospital has with its orderlies. In a few hospitals they are members of the training school, and receive instruction in some classes with the nurses. This is not always considered advisable, but it is said to result in good for the orderlies. Certainly if they are to do nursing work they should be specially taught for it, and inasmuch as they must sometimes be depended upon for the most delicate and important nursing work, it is but fair to patients as well as to orderlies that they have thorough and systematic instruction.

The general discipline of the ward, referring only to the patients, has been mentioned; but there is a degree of order also to be maintained as to the appearance of the ward. Perhaps it may be wrong to mention this first, lest appearance be exaggerated out of proportion to its necessity; but when it is understood that something is meant that goes deeper than merely a spick-and-span appearance, due to squarely made beds and squarely set tables and chairs, which most head nurses rightly insist upon, surely all will agree as to its importance. Reference is made to pervading order that suggests repose, so essential, and that cleanliness and neatness, which is said to be akin to Godliness, and which does much toward engendering and establishing the self-respect of all the patients; and that absence of unsightly objects and unseemly behavior, which is conducive to good manners and good morals. The orderly aspect of the ward that maintains such principles is assured. No further discipline is required there for appearances' sake, and some of the patients there make their first and nearest approach to the plane of higher living.

Reference should also be made to the order which consists in the quietness and dignity of the workers, which is as infectious as enthusiasm, and, like the latter, is best promoted by the example of the senior for the junior, the higher for the lower.

Instruction in Practical Nursing in the Small School

BY SUSAN A. WATSON,
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Only a few years ago it was an almost unheard-of thing for any training school to give a course of any kind before the pupils were sent to the wards. Many a nurse trained in those days recalls being given some difficult task, her first day on duty, which she had to do as best she could, because just at that time others were too busy to show her. It seemed as if the services of the probationers could not be spared long enough for any preliminary study, especially in the smaller hospitals in which a probationer arrived to replace some outgoing graduate. Now the tendency to admit in classes makes it easier to provide for preliminary instruction.

It is not usually possible to allow the three or four months given by the large training schools, but there are several advantages gained even if the course is no longer than two or three weeks. It gives an opportunity for the pupil to adapt herself to an entirely new life. Everything is strange when she arrives, and the manner of living is new to her; and without instruction in her duties she is likely to get nervous and discouraged and, as a result, homesick. She may receive her first instruction in the presence of patients, where her evident "greenness" causes her to be pitied and patronized by some, and ordered about by others. But with training she has more self-confidence and can do better work from the beginning. She acquires deftness enough in the daily routine of beds and baths so that no patient need feel he or she is being "practiced on." It gives her a start so that, with daily demonstrations and class-work, she can keep ahead of her ward work without doing things she has not done under the eye of her teacher in the class-room.

The subjects put into this first two weeks are, of course, those things usually given probationers to do first in the ward. The exact way of doing whatever cleaning is left to the nurses; folding of linen; making ward supplies; making beds; making patients comfortable; cleansing baths; filling hot water bags, ice caps, etc.; in fact, all of the work the pupil should do during the first month in the hospital is shown her in these two weeks. Then gradually the more advanced nursing measures are introduced, their order depending on their complexity.

Another reason why it is so hard for the small training school is because of the time it takes; for the instructor must not only teach, but supervise the hospital wards. This difficulty has been overcome in a few schools by using a senior pupil for assistant instructor of probationers. A pupil who has shown her superiority in practical nursing, and who will probably do training school work, is selected. This has proved valuable experience to the senior pupil as well, in a branch of work often untried. The probationers do not go to the wards at all for two or three weeks, but receive lessons and practice in the most elementary points. The instruction is given by the superintendent and her assistant. The senior pupil attends all classes and demonstrations and thus is able to supervise the practice and study hours. She is able to collect and arrange the utensils needed for the next lesson. After two or three weeks, when the probationers go to the wards for a few hours every day, this same senior follows their work closely, strengthening weak points in their technic, and reporting daily to the instructor. This does not mean, of course, that the instructor does not see their work for herself, but it is often a guide in her selection.

As far as possible, the probationers should act as subjects for each other. It is not often desirable to use a patient for this purpose, and it gives each one a chance to put herself in the patient's place. There is no better way to criticize than from the patient's point of view. In giving baths, for example, one appreciates how it feels not to be dried thoroughly, to be unduly exposed, or to be bathed in water too hot or too cold.

To give enemata and douches a dummy is almost indispensable. Yet expense has to be considered. The full directions for a home-made doll costing about eight dollars can be obtained for a small sum from Miss Helen Bridge, Washington University Hospital, St. Louis, Mo.

It is more satisfactory to have for this demonstration and practice work a room containing a bed and at least the most used utensils. For the sake of the subjects, this should be in or near the nurses' home. However, this may be done, with more effort, in a private room or even a nurse's bed room.

Some Don'ts for the Amateur Nurse

The Philadelphia *Ledger* of March 7 publishes the following "Don'ts" and "Do's" that are considered especially valuable for the nurse beginning her career.

It is not so much the young nurse who needs these instructions, because she is sure to have them reiterated frequently during her days in the training school. But experience leads the impartial observer to believe that the one who has long been in practice, who is perfectly well acquainted with the reminders, while she believes in them and generally heeds them, sometimes "forgets." She will not think them tiresome nor unnecessary.

Don't ask your patient every half hour how he feels. Give him time.

Don't sit on the patient's bed or lean against the foot of it. He probably does not like to be shaken.

Don't ask your patient what he wants to eat. Bring him something he is allowed to have, served as daintily and invitingly as possible. Have hot things hot and cold things cold. Lukewarmness is never relished.

Don't talk all the time. The patient, perhaps, wants to be quiet.

Don't tell your patient how tired you are.

Don't forget to have the room well ventilated, but don't let any draught blow on the patient. A screen is very useful.

Don't let the light shine directly in the patient's eyes, either day or night.

Don't dust with a feather duster. There are doubtless plenty of germs about.

Don't think you know better than the doctor, but follow his directions implicitly. If you don't understand ask him and he will be glad to explain.

Don't go around with a long face. If you can't be cheerful, get out.

To Regulate the Practice of Nursing

The Commissioner of Health in New York City has considered the necessity of amending the "sanitary code" in order to provide for stricter regulations intended to insure better nursing care for the sick.

His purpose is based upon his observation that directories and other agencies are furnishing to employers non-graduates and many poorly equipped nurses, even when the employer has requested and thinks he is obtaining a graduate.

The amendment which he would have adopted reads as follows:

"No person other than one who shall have graduated after a course of training of not less than two years' duration from a hospital training school for nurses shall practice as or hold himself or herself out to be or be by any one held out or represented to be a trained, graduate or certified nurse, or use any letters, words, or figures to indicate that such person is a trained, graduate or certified nurse."

Nurses who have long and strenuously advocated registration by the state must feel justified for their efforts in having their theory supported by so great a personage as the Health Commissioner of New York City.

Unnecessary noise, or noise that creates an expectation in the mind, is that which hurts a patient.

Without cleanliness you cannot have all the effect of ventilation; without ventilation you can have no thorough cleanliness.

A patient should, if possible, not see or smell either the food of others, or a greater amount of food than he himself can consume at one time, or even hear food talked about or see it in the raw state. I know of no exception to the above rule. The breaking of it always induces a greater or less incapacity for taking food.

"What can't be cured must be endured," is the very worst and most dangerous maxim for a nurse which ever was made. Patience and resignation in her are but other words for carelessness or indifference—contemptible, if in regard to herself; culpable, if in regard to her sick.

If you cannot get the habit of observation in one way or other, you had better give up being a nurse, for it is not your calling, however kind and anxious you may be.

There is, unquestionably, a physiognomy of disease. Let the nurse learn it. FLORENCE NIGHTINGALE.

PREVENTION OF TUBERCULOSIS

Conducted under the auspices of
THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

The Negro Tuberculosis Problem

No problem confronting the southern states today is more acute or demands more immediate attention than that of the health of the negro. Not even the development of railroads, the opening up of waterways, nor the provision of capital for farm and industrial improvement should require the prompt action demanded by the menace of tuberculosis, trachoma, pellagra, hookworm and other infectious diseases, to say nothing of infant mortality and preventable cases of death not due to infection.

The South is awakened in regard to its commercial needs. Many sections of the South, however, are dormant with regard to their health needs. The problem of the negro is too intimately bound up with the life of the white man to be neglected or ignored. The negro washerwoman, nursemaid, cook, and domestic servant are everywhere present and hardly a southern household is without them. The negro gardener, man-of-all-work, farm-hand, porter and common laborer is in constant association with his white brothers, both in superior and in inferior positions.

In the April number of the Journal of the Outdoor Life a symposium on the problem of tuberculosis is contributed by four prominent writers. Dr. W. F. Brunner, Health Officer of Savannah, in an article on "The Negro Health Problem in Southern Cities," contends very vigorously that the problem of the tuberculous negro cannot be neglected. He points out that the death rate from the negro is from three to six times that of the whites, particularly in certain diseases such as tuberculosis and pneumonia. In a city like Savannah, where there are more negroes than white people, the problem is intensified. On the other hand, Dr. Brunner contends that there is nothing inherent in the negro that should cause this higher death rate, and that the entire problem is one of environment. True, the negro may be slightly more susceptible than the older white race, owing to the fact that his comparatively short contact with civilization has not yet given him the immunity he needs against this plague. The problem, however, is essentially one of the provision of good housing and proper working and living conditions. When the landlords of the South begin to recognize in the negro more than an immediate asset, which will contribute a few dollars to satisfy a present greed, and will look at him as an asset to the future upbuilding of the country, Dr. Brunner thinks that conditions will improve.

Home from which a patient in the last stages was taken to the hospital. The older members of family are domestic servants.

Miss Rosa Lowe, the Secretary of the Atlanta Anti-Tuberculosis and Visiting Nurse Association, gives a very interesting account of the manner in which that organization has approached the educational problem among the negroes. They have found the colored leaders only too ready to cooperate and to assist in every way to help spread the message of tuberculosis prevention among those less fortunate.

Dr. Martin F. Sloan, Superintendent of the Eudowood Sanatorium, makes an earnest plea for special hospital facilities for the tuberculous negro. He points out the danger of infection both among the colored and the white people and calls for immediate attention to the hospital needs as a present and increasing danger. "From 1903 to 1914, inclusive," says Dr. Sloan, "5,467 negroes died of tuberculosis in the city of Baltimore; 252 died last year. Practically all of these died in their homes, scattering virile germs of infection to their associates, who, as laundresses, cooks, nursemaids, barbers, etc., carried them to the four points of the city and state."

The most interesting and significant article, however, in the symposium is contributed by Dr. William A. Harris, a public-spirited colored physician of Savannah, Ga. Dr. Harris firmly believes that with education the standard of living can be raised among his own people, and he tells of some of his interesting pioneer experiences among the churches and schools of Savannah, where, with a primitive stereopticon apparatus, he has been able to interest thousands of people in the question of tuberculosis. Like Dr. Brunner, he feels that the problem of tuberculosis among the negroes is essentially one of environment. Better houses must be provided, and more attention must be given to the general social and civic life of the negro in our southern cities.

Those who are interested in the problem of the tuberculous negro should read these four articles with a great deal of interest.[1]

Lined up for inspection. Laundry work is the only means of support of this advanced case and her family. (Photos by courtesy of Miss Elinor Jones, Baltimore.)

To Interest Physicians and Nurses in Tuberculosis

For the purpose of securing more co-operation from physicians and nurses in the anti-tuberculosis compaign, The National Association for the Study and Prevention of Tuberculosis has inaugurated a movement to bring the importance of this subject to the attention of these two groups.

Among the first things which the Association is trying to do is to induce the medical colleges and schools of nursing to give more instruction, particularly of a clinical nature, on tuberculosis. An effort will be made also to reach the individual practitioners and nurses by special booklets prepared for this purpose. The clinical and other facilities of the various organizations affiliated with the National Association will so far as possible be made available for the widest possible use in training doctors and nurses in tuberculosis work.

"The object of this campaign," says Dr. Charles J. Hatfield, Executive Secretary of the National Association, in making the announcement, "is primarily to secure more accurate and earlier diagnosis of tuberculosis on the part of physicians and to show nurses the great opportunities of service in the home care of consumptives. We shall also be able to put the average family physician in touch with the best methods of treating tuberculosis and with the most recent literature on that subject, thereby affording to the general public increased protection from this disease. Practically all of the medical colleges and schools of nursing of the country have expressed their approval of our plan and have offered to cooperate with us. While the medical profession generally has unselfishly assisted the nation-wide campaign against this disease, we feel, because of its prevalence, tuberculosis should be given special attention by medical students and practicing physicians everywhere. No other single disease demands so much time and attention from the general practitioner in medicine. We shall try to make it easy for any doctor or nurse to acquire a specialized knowledge of tuberculosis."

[1]The address of the Journal of the Outdoor Life is 289 Fourth avenue, New York City. Copies of the April number may be purchased for 10 cents each.

PREVENTION OF BLINDNESS

MATERNITY

Conducted by CAROLYN CONANT VAN BLARCOM, R. N.,
Secretary National Committee for the Prevention of Blindness; Chairman Committee on Infant Welfare, National Organization for Public Health Nursing.

Preventive Obstetrics

BY MARY BEARD,
Director, Instructive District Nursing Association, Boston.

In the State of Massachusetts the midwife does not officially exist. Strangely enough, however, the Massachusetts state laws make this "nonexistent" individual punishable if she fails to comply with birth requirements. We do not recognize her, nor train her, nor license her, nor supervise her—but we do punish her. This unusual position for a citizen of the commonwealth demands unusual consideration.

Laws concerning individuals lead us to seek for the reasons for their existence—no laws at all concerning them, when we know they live and thrive on their practice among us, lead us even more seriously to seek for the origin and justification of our principles in regard to midwife regulation.

In the last analysis we all want one thing—not two. We want better obstetrics. By better obstetrics we mean more scientific care before, at the time, and after the birth of babies. By better obstetrics we mean also a more available obstetric service for the communities in which we live. Like other public health activities, we are trying to make good obstetrics really a public service, not only available to the mother of every child, but thrust upon her as a necessity of her baby's citizenship. To begin with, what is it that women want when their privilege of motherhood is about to be fulfilled? The most universal want is that of an adviser who really knows all about the experience and who will direct, reassure and encourage. The mother next wants the assurance that someone will take care of the family while she is unable to do so. She wants someone to come to her for the confinement, someone to care for her and for the baby until she is well again.

The immediate and obvious answer to this universal demand is the employment of the midwife. It is in an effort to demonstrate that this solution of the difficulty is not in reality a solution at all, that at her best the midwife can never meet the needs of the situation that the following pages are written.

Dr. Arthur Newsholme, the recognized authority in Great Britain on all matters relating to infant mortality, has written:

"The dangers to infantile life associated with parturition are followed by the dangers associated with errors in infantile management, especially as to food, clothing and cleanliness. The results of such errors are especially seen during the later months of infancy; but their origin dates commonly from the first month of life, during a considerable part of which, probably in something like 50 per cent of the total births in England and Wales, midwives are in attendance. The fact that, of the total deaths of infants in the first year of life, a third (34.6 percent) occur during the first four weeks, and a fourth (25.8 percent) during the first two weeks of life must be regarded as the result in doubtful proportions of congenital defects, of improper attention at birth, and of bad management after birth."

In offering recommendations for the reduction of infant mortality Dr. Newsholme says: "The evidence already available points to the conclusion that infant mortality can be lowered by giving adequate training and health to midwives. This especially applies to the saving of infant life at and soon after birth. *It has also to be remembered that the midwife's influence with the mother, whom she has helped in her need, is very great; and it is her advice as to the management and particularly as to the feeding of the infant which is most likely to be followed.*"[1]

It is to this last paragraph of Dr. Newsholme's that I wish to draw attention. Do we agree with the idea expressed? Do any of us really wish to leave in the hands of these uneducated women the high task of teaching the duties of motherhood to those women whose need of this teaching is so great? Experience has taught us otherwise. Health teaching in the homes where poverty and ignorance make such teaching most necessary has been carried on by district nurses for many years. Early in the development of district nursing in England, as long ago as 1874, it was found necessary to instigate an investigation of district nursing because "the whole system of district nursing then existing in England was amateur, slovenly and haphazard and the connection with the physician was very lax." (Mrs. Dacre Craven—Paper on District Nursing read at International Congress of Charities and Corrections, Chicago, 1893.) "A result of this investigation was the foundation of the Metropolitan and National Nursing Association in 1874 with its great departure from previous methods, in the employment only of nurses drawn from the ranks of educated women, so-called gentlewomen." The reasons for the success of this plan were chiefly, to quote Mrs. Dacre Craven, "In nursing the poor in their own homes, nurses were placed in positions of greater responsibility in carrying out doctors' orders then in hospitals; that women of education would be more capable of exercising such responsibility; that the vocation would attract women anxious for independent employment, and a corps of nurses recruited altogether from among educated women would have a greater influence over the patients, and by their higher social position would tend to raise the whole body of professional nurses in the consideration of the public."[2]

In 1874 a more or less bitter experience taught those best qualified to judge that it requires the very highest type of woman to be a successful teacher of hygiene and sanitation in the homes of ignorance and poverty. In our desire to provide instruction because we see its need, let us not forget that this is true. Prenatal instruction and advice given in those days following immediately after the birth of her baby comes with great weight if the teacher is truly a teacher. Let us not repeat an old mistake of providing for this office one who by her very nature can never, in any true sense, fulfil its functions.

In large cities where maternity hospitals and medical students are found, a very practical and desirable service may be secured for women who need it. For the small city, the country town or the rural community we have yet to see *disproved* an equally practical service which would have as its foundation principles no other than those gov-

[1]Report on Infant and Child Mortality by Dr. Arthur Newsholme, Chief Medical Officer of the local Government Board, contained in Supplement to the Board's Annual Report, 1909-10, presented to both Houses of Parliament

[2]Miss Amy Hughes' Report of the International Congress of Nurses, 1901.

erning an out-patient service from a maternity hospital—i. e., an obstetrician for confinement and preliminary obstetrical examination and the services of trained nurses both for prenatal and postpartum visits.

What is known as the "West End" in Boston is a very congested district. Russians, Poles, Italians and many other foreign-born women live here. In the heart of this district, the Boston Lying-in Hospital is situated. Nearby is the pregnancy clinic of the out-patient department of the hospital. This out-patient department was established in 1888. Since that time 43,454 patients have been cared for in their homes by this department in various parts of the City of Boston. In many particulars, this service has met the fundamental needs of the mothers in the West End. Frequently women who have moved away come back in order to have the care of the Boston Lying-in Hospital doctors and nurses before and after the time of confinement. The following is the routine procedure: Women are encouraged to come early and may apply at any time to the pregnancy clinic for admission to the out-patient department. A thorough examination is made at the clinic. The patient is then given a card of admission to the out-patient department, her name and address are given to the district nurse in her locality, and a routine of prenatal nursing is begun. The following printed instructions are pasted into each nurse's notebook and are intended as a reminder to her:

PRENATAL VISITS

1. General condition and appearance.
   Color, cheerfulness, apprehension, strength, dyspnœa.
   Pain in back (belt)?
2. Swelling of face, hands, feet—varicose veins of legs, hemorrhoids.
3. Nausea and vomiting. "Heart-burn." (Oil or cream one-half hour before eating.)
4. Headache. Toothache.
5. Vision, dizziness, blurring, spots or flakes before eyes.
6. Leucorrhœa. Blood?
7. Urine, at least 1 qt. daily. Specimen, frequency, burning, painful?
   Sudden reduction in amount dangerous.
8. Bowels free? Flatulency. 1. Diet. 2. Fruit. 3. Enemata. 4. R senna, prunes. 5. R cascara. 6. Co. licorice powder.
9. Breast and nipples. Clean and dry? Lanolin if necessary. Did she nurse her other children, how long? or why not? Support if necessary.
10. Feel life after five months? If not listen for heart, locate and count.

GENERAL ADVICE

Before taking neighbor's advice ask nurse or doctor.

1. Reassure with cheerful hopefulness of favorable outcome.
2. Fresh air and exercise, work in moderation only, better none toward end of term. Lying down twice daily. Bed early.
3. Clothing loose, corsets, none at all or loose. Belt for abdominal support if pain in back. No round garters.
4. Baths, daily, cool sponge. Sweating increased in pregnancy.
5. Food, mixed diet, meat only once daily. Not too much food. Never a large meal. Two lunches between meals. Plenty of liquids.
6. Water, 8 to 16 glasses (1 to 2 qts.), enough to yield at least 1 qt. urine.
7. Baby clothes. These should be very plain. Most of them you can make yourself.
   3 dresses at $.17 ..... $0.51
   3 petticoats (Gertrude design) at $.17 ..... .51
   Made of outing flannel
   1½ yds. material for each dress, petticoat and nightdress
   3 nightgowns at $.17 ..... .51
   3 pairs stockings at $.12½ ..... .38
   3 shirts at $.25 each ..... .75
   3 bands straight (flannel ¾ yd.) ..... .23
   3 bands with straps, silk and wool (seconds) at $.25 each .... .75
   1 Baby Bunting coat and hood in one $0.63
   20 diapers, 2 pieces, 10 yds. each at $.55 ..... 1.10
   Total $5.37
8. Supplies for labor.
   Besides the usual kitchen utensils and bedding have ready:
   2 lbs. absorbent cotton.
   1 piece of oilcloth to protect the bed.
   A piece of castile soap.
   Plenty of newspapers.
   A clean piece of blanket to wrap the baby in.
   A clothes basket for the baby's bed.
9. Prepare mind for signs of labor and probable course, especially for first labor.
1. Urine.
   Color. Normal, amber.
   If high or dark, too concentrated, drink more water.
   Sp. gr. normal, 1021.
   If 1025 or higher, too concentrated, drink more water.
   Acidity. Normal, slightly acid.
   If very acid, too concentrated, drink more water.
   Albumen. Heat test and dilute (½-5%) acetic acid, if a distinct cloud forms report to doctor.
2. Blood pressure.
   Normal 110-120. Lower is harmless.

Fig. 1. Ignorance, poverty and the new baby.

   Rise from individual average, report and watch.
   Pressure of 140-160 report and watch.
   150-170 investigate and treat immediately.
   160-190 dangerous.
   170-230 usual before or in eclampsia.

Every ten days a visit is paid by the nurse. For each patient there is a medical history card and a family social history card, as shown on pages 354 and 355.

Observation of the patient's physical condition, of her habits of personal hygiene, diet, recreation, exercise, clothing, regularity of living, is the nurse's first concern. Any abnormal condition is reported immediately to the doctor in charge of the pregnancy clinic and the patient is visited by the doctor if she does not report at the clinic when she is sent by the nurse. Observation of the physical condition is only part of the nurse's duty on these prenatal visits. Upon the nurse's ability to teach the mother such things as the importance of preparing herself for the duty of nursing her baby, of clothing him properly and providing for him a suitable sleeping place depends the real value of her visit. Reassurance to an anxious young mother

counts for much and reacts definitely upon her physical condition.

When labor begins the Boston Lying-in Hospital is notified; an extern is sent who is one of the Harvard Medical School students. This student delivers the patient unless some abnormality presents itself, in which case the house officer is called, who, if he sees fit, calls upon a member of the attending staff. Immediate response to the patient's call is assured by this system and the skill of the best obstetricians in Boston is at the service of the patient who needs expert care. The service is generally recognized in the neighborhood as a charity, although the Boston Lying-in Hospital collects an indefinite fee where this is possible.

After care for a patient is as follows: The student who has delivered the patient visits her twice daily for three days. The routine after care given by a student is planned with infinite attention to minor details. For instance, he is expected to examine the patient on each visit, to do the dressing, to see that the binder and bed linen are clean and in proper condition, to prepare and leave in a covered dish the pads to be used between visits. He must also examine the baby and is responsible for the condition of eyes and cord.

Fig. 2. Knowledge, the rising generation and the nurse.

After the third day the student visits the patient once a day until the ninth or tenth day. The house officer visits each patient on the third day after delivery and again on the tenth in order to discharge her in good condition.

Nursing care is given by the same district nurse who made prenatal visits in the family. The cost of a nurse's visit is fifty cents. She collects the whole or a part of this fee according to circumstances. An Italian doctor with a large foreign practice in the neighborhood of the pregnancy clinic has said that these women are both able and willing to pay as much as ten dollars for care during childbirth. Since emphasis has been laid in the Nursing Association upon the principle of fee collection in the last two years the amount collected in this district has increased from thirty to one hundred dollars a month.

Attendance at the pregnancy clinic means that such measurements are taken as will preclude the surprise of discovering an abnormal pelvis when it is too late. It means, too, that tests will be made whenever a patient shows symptoms of syphilis or gonorrhœa so that treatment may be begun at once.

The pregnancy clinic and prenatal nursing, with the best care at confinements has become a very popular service. This is to be accounted for by the recognition of the people themselves that the best that science can offer to any prospective mother is at their service and is also practically available.

The regularity of the service, the perfection of the system and the prompt response to the summons when the patient needs a doctor has made a businesslike maternity center the worth of which is proved daily by its use.

Side by side with districts of foreign-born women who find this system highly satisfactory there are districts in which the women never think of anything but a midwife when their baby is expected. These women cling to their traditions, and influenced by their immediate neighbors who perhaps are more recent arrivals, continue the use of the midwife. A curiously defined line will mark off such a group from those who know about and value the out-patient work described above.

Ignorance on the part of the mothers is in these nearby districts the obstacle to be overcome.

Bad obstetrics, however, exist in almost every one of the many smaller cities comprising greater Boston. They are essentially distinct cities though ostensibly one great city. Geographically, and by reason of strong traditions, this will be true for a long time to come. Poor doctors there are in every community. Boston suffers from these. The Massachusetts registration law makes our suffering perhaps more acute than that in other states. There are four quite obvious reasons for our poor obstetrics in Boston—low-grade doctors, the practice of poor midwives, ignorance on the part of the mothers—and poverty.

Knowing these facts, what is ideal as a plan to better conditions for the coming generation? And, seeing an ideal, can we make a working plan for its accomplishment? There are some possibilities. To meet ignorance there must be teaching of a kind that will be acceptable and effective. To help poverty there must be, where health is concerned, legislation that will make good medical and nursing care available.

In the weekly Bulletin of the Department of Health of the City of New York, January 23 of this year, was published the following comment on a paper read at the recent meeting of the American Public Health Association by B. S. Warren, Surgeon of the U. S. Public Health Service:

"At the present time, in the United States, the burden of the loss occasioned by sickness is borne by the individual who, in many instances, is broken by the extra load and is added to the number of impoverished or destitute to be cared for by the community. Changing conditions in this country will sooner or later, as in other countries, force the enactment of a law providing for sickness insurance. Such a step should be welcomed by all interested in public health, for undoubtedly this form of insurance will prove a powerful factor in the prevention of disease."

Justice and reason demand sickness and maternity insurance. When it comes we may hope that the evil effects of poverty on our new-born babies will be diminished.

Date..... HISTORY OF CASE White—Colored

Surname..... Given Name..... Age..... S. M. W. D.....

Address ..... District .....

Reported by ..... Nurse .....

Occupation day / night hours ..... Exact Process .....

Diagnosis .....

Doctor ..... Address .....

No. Pregnancies ..... Due .....

Past History .....

Previous labors and miscarriages.....

Nursed? ..... How long? .....

Present Condition .....

Dyspnœa..... Headache..... Nipples..... Nausea..... Oedema..... Bowels ..... Bleeding.....

Backache..... Breasts..... Fœtus..... Vomiting..... Varicose Veins..... Urination .....

Outfit lacks .....

Predicted outcome .....

Notes .....

Doctor's directions .....

Result..... No. of visits..... Dismissed.....

Fig. 3. Medical history card.

Poverty being one cause of poor obstetrics, what shall we look to as a possible means of combating the other two? What shall we do with the poor doctors? What shall we do with the "non-existent" midwife who practices?

Our experience with the Boston Lying-in Hospital pregnancy clinic and its follow-up obstetrical service makes us believe that we have found a reasonable working basis for an attempt to bring the science of obstetrics to a practical and available point for all the mothers who are to bring babies into our community. The science of obstetrics is never practiced by midwives—no matter how carefully educated they may be. It is the science of obstetrics with which we are concerned. Of what use is the best intellectual effort science can make if we cannot find a way to make the truths she discovers available "for the people and by the people"?

Let us say boldly that we do want the application of the science of obstetrics and nothing less than this.

A Committee of the Women's Municipal League of Boston, Mrs. William L. Putnam, chairman, has been formed for the sole purpose of developing and extending pregnancy clinics. I quote from a paper entitled, "The Resources for Giving Prenatal Care," read by Dr. Arthur B. Emmons, who is in charge of these clinics, at the last meeting of the American Association for the Study and Prevention of Infant Mortality:

"This committee, backed by an advisory board of experienced obstetricians, has undertaken the next step; that is the more difficult problem of medical supervision during pregnancy and adequate care at confinement. Two dispensary prenatal clinics are now under the committee's supervision, one at the Peter Bent Brigham Hospital, the other at the Maverick Dispensary in East Boston. The committee stand ready to develop more of these prenatal and obstetric clinics as demand is made.

These clinics are under direct supervision of an obstetrician. They use as a basis to work with, not the trained or untrained midwife, but the young obstetricians who are graduates of some maternity hospital, and the nurses of the Instructive District Nursing Association.

The work is gradually being standardized; for example: No patient before confinement may be visited by a nurse more than twice unless she has been examined by a private physician or by the obstetrician at the clinic. Thus the medical responsibility is carried by the doctor, which the committee feels is essential for the best results. Two simple examples will show the importance of an early medical examination. 1. A patient in South Boston was found after labor had progressed some time to have a too small pelvis for successful labor. A difficult operation resulted in the death of the mother and child. Had an early examination been made Cæsarean section in a hospital should have saved hours of terrible suffering and both lives. 2. The district nurse made several visits, giving careful instruction, to a patient registered at a certain hospital, but not examined. Severe symptoms developed. Examination then disclosed the fact that the patient was not pregnant.

Such a system is designed to use the ever-increasing medical and nursing knowledge and skill available in any community and to stimulate this to its highest efficiency. Results are not yet sufficiently numerous to warrant generalization.

For such an organization, semi-free and free hospital beds must be available. We know that at any time during pregnancy the case may demand major surgery. Obviously the expense of this cannot be wholly met by the ordinary family of the crowded districts, nor even by those of moderate means.

The expense to the patient for care in these clinics is $10.00 in E. Boston, where the dispensary guarantees to the obstetrician $5.00 per case, while at the Peter Bent Brigham clinic the doctor, after confinement, is allowed to collect $10.00 from the patient. The Instructive District Nursing Association receives $2.00 in E. Boston, while in Roxbury clinic $5.00 covers the whole nursing service, both prenatal and postnatal.

One thing we find helps out in both places: many women are insured in a certain large insurance company; the obstetric nursing is then paid for by this company. I wish to raise the question of maternity insurance to include a reasonable fee for th physician and thus provide the means for efficient service. There may be some objections. There certainly are many advantages."

If maternity insurance were to become a practical factor for our consideration, how should we wish to have the money spent? One immediate cause of poor obstetrics—poverty—being removed, why not use the money to combat another immediate cause, ignorance?

To be sure, we could establish schools of midwifery, a

Surname..... No.....

Date	Address

Man's first Name.....
Date of Birth.....
Place of Birth.....
How long in U. S.....

Woman's first Name.....
Date of Birth.....
Place of Birth.....
How long in U. S.....

Date	Number in Family			Boarders	Roomers
	Adults	Boys	Girls		

Health of Family

Milk Supply

Date	Occupation

Earnings

Week	Steady	Irregular	Occasional

Interested Agencies

C. E..... Church.....
Union Ben..... Faith.....
Hebrew.....

Date	Insurance	Rent

Rooms			Ventilation	Light	Clean
No.	F. L.	F. B.			

Neighborhood	Sewerage

Remarks: .....

Fig. 4. Family social history card.

system of supervision of midwives and a control of these traditional "nurses," but would such education and control bring to us in America all the good results that have followed in England? And do we not want something more? As a stop-gap in some parts of this country the practice of the midwife may and undoubtedly does present quite another aspect than the one we see here. As an idea for a working plan to go hand in hand with the awakened public intelligence which will bring maternity insurance we believe we ought to work towards the accomplishment of what is better than this practice. In matters of public health we must give nothing short of the very best. This is not idealism. It is common sense. "Health" as a subject is far more popular than "illness" today. "Health centers" arouse by their very name a stir of enthusiasm in any audience. Let us take advantage of this great tendency of our times. Let our "health centers" have each its pregnancy clinic, where preventive medicine applied to obstetrics will be the spirit that prevails. Let us put redoubled effort into making these clinics popular. Let us spend our money in this way in order that when maternity insurance comes we may have ready a demonstration of the best obstetrical service so practically organized as to have proved itself to be what the people of the community want and therefore what they will use.

SPECIALIZATION IN NURSING

Dr. Summersgill Advocates Selection of Specialty in Last School Year

Dr. H. T. Summersgill, Superintendent University of California Hospital, addressed the Superintendent of the Nurses' Association of San Francisco recently on the subject of the "Education of Nurses." In the address he advocated the elective system whereby a certain number of nurses at the top of their classes, at the end of their second year, be permitted to elect the type of nursing they desire to follow up during the last six months of their third year. He recommended that the nurses recognized as being at the top of their classes be in the following proportions:

In classes of 50 or over, that the 8 highest standing nurses be recognized as the honor nurses.

In classes of 30 to 50, he recommended that 6 be entitled to elect their work.

In classes from 30 to 20, he recommended 4 nurses.

In classes from 20 to 10 the 3 highest standing nurses are recommended as the most suitable number.

The highest standing nurses who are permitted to pursue elective work during the last 6 months will devote their time to the following branches: 1. Social Service; 2. Administrative Work; 3. Maternity; 4. Pediatrics; 5. Surgical Nursing; 6. Dietetics; 7. Housekeeping; 8. Eye, Ear, Nose and Throat office nursing.

This arrangement as made is not recommended for every hospital, but is the type which has been started in the University of California Hospital. In those institutions possessing large services in mental or nervous diseases, or contagious diseases, it would, of course, be desirable to permit nurses to choose one of these branches as an elective.

At the annual meeting in New York City of the Beth Israel Hospital Association on February 11, it was announced that a new hospital building was planned to be erected in Livingston Place. It will be twelve to fifteen stories high and will house 500 patients. A special feature of the hospital will be accommodations for persons of moderate means who do not wish to be charity patients, and yet are unable to pay high charges in the hospital.

DEPARTMENT OF LIFE EXTENSION

Conducted by EUGENE L. FISK, M. D.
Director of Hygiene, Life Extension Institute, Inc.
25 West Forty-Fifth Street, New York City.

Getting the Best Out of a Periodic Health Examination

BY EUGENE L. FISK, M. D.,
Director of Hygiene, Life Extension Institute, Inc., New York.

Any form of periodic physical health examination or inspection, however brief and superficial, has a certain value. Even a five-minute talk once a year with a physician on the subject of health and habits has a definite life-lengthening value and an improving influence, provided, of course, the physician is of the right type and thoroughly alive to his opportunity. A physician who takes no interest in a patient until he has a collection of complex derangements that require rare diagnostic skill for their correct interpretation, and are usually beyond the reach of medical science, so far as cure is concerned, is not likely to prove of much value in this kind of work, even though he spends hours in the examination of the body.

The ideal physical health examination would involve complete and exhaustive separate examinations by specialists trained in the study of each region of the body. A limited number of wealthy men have such examinations made annually. A gastro-enterologist examines the stomach and intestines; a lung specialist examines the lungs; a neurologist the nervous system; a rhinologist the nose; and so on down the line. Such a form of service cannot, of course, be supplied to the average man, simply because these highly trained specialists are limited in number and only available in certain localities, and the cost of such examinations would be prohibitive for the average individual.

Between this ideal and the minimum of the brief health inspection there is a middle course which can be made effective and helpful to the average individual. This is a "periodic health survey," such as is supplied by the standard examination of the Life Extension Institute.

Such a survey can be made by any well-trained, up-to-date general practitioner who has been fully instructed as to the lines along which to carry the examination. It involves a thorough examination of every region of the body, and if done with the proper interest, enthusiasm and precision, it cannot fail to uncover any physical disability that may exist.

The final diagnosis for the purpose of treatment may require the intervention of the specialist, in which case the patient can enlist his services. But in a majority of cases this is not necessary.

Some highly trained diagnosticians, who are accustomed to spend an hour or more in examining some particular region, do not appreciate the value of this periodic health survey. Realizing the insufficiency of the average practitioner to make an accurate diagnosis of certain obscure conditions, they fail to appreciate that the survey, properly made, at least serves to reveal whether there is a suspicion of trouble in any particular region, and thus the patient has the benefit of knowing that he requires special investigation and an expert diagnosis of that condition.

On the other hand, the expert clinical specialist who is accustomed to deal largely with well developed pathological conditions does not always appreciate the importance of slight variations from the normal. If the condition does not require active treatment or operation, he may not take a very deep interest in it from the standpoint of safeguarding the remote future of the patient.

Thus a general health survey, made by a physician thoroughly alive to the importance of such work, one who is properly guided and stimulated by those who are carrying it on in a systematic way, may in the end prove quite as effectual in its health-protective and health-building results as the ideal examination by a group of specialists.

This health survey should be more than a mere physical examination. It should cover an inquiry into heredity and living habits, as well as into the physical condition and physical history.

Two individuals, standing on an identical plane so far as their physical condition is concerned, may differ greatly in their resistance and in their prospective longevity by reason of hereditary or occupational influences or certain tendencies in their living habits.

The periodic health survey should have for its object a complete picture of the individual. From this picture an effort should be made to derive another picture of how the individual might appear in future years if left to drift for himself, and then another picture of how he would probably appear if his disabilities were relieved and his errors in living habits corrected.

It is obvious that this work will fall far short of its maximum possibilities unless thorough consideration is given to all phases of the health survey. If we focus our attention solely on ascertaining diseased conditions, such as tuberculosis, or heart disease, the work would no doubt be of great benefit. But it would be neglecting tremendous opportunities for physical upbuilding and increased capacities for happiness and achievement.

No one can question the profound importance of diet, exercise and living habits generally in influencing physical trend and the resistance to disease. It has lately become apparent, however, that many forms of obscure disease, formerly attributed solely to dietetic errors or to disturbances of metabolism in the body, are in reality frank infections.

The degree to which microorganisms are responsible for disease has been very much underestimated. We have been thoroughly alive to the menace of tuberculosis and to the acute epidemic diseases generally, but the extent to which slow, insidious infection has affected heart, kidneys, stomach, joints and other regions of the body has only lately been revealed. This we term "focal infection"; that is, from some point favorable to the development of germ life—such as the tooth sockets, the accessory sinuses of the nose, the tonsils, middle ear—various organisms, chiefly of the pneumococcus-streptococcus group, migrate through the blood stream or lymph channels to certain points, such as the appendix, gall bladder, duodenum, joints, etc., and cause ulceration or other destructive processes.

This knowledge only emphasizes the need for the periodic health survey. The importance of detecting errors in vision, because of the profound reflex effect upon the nervous system, has long been known; but while seeking for such sources of reflex irritation we have woefully neglected foci of infection in the head, such as alveolar abscesses, which may lead to far more destructive effects—

for example, ulcer of the stomach, a condition frequently forming the basis of a cancer.

In the work of the Institute this relationship between mouth infection and systemic disturbance has been clearly shown. Among those showing oral sepsis, 72 percent also showed some disturbance of heart, circulation or kidneys, or other organic defect.

It must be evident, therefore, that however earnestly we endeavor to correct faulty living habits, however faithfully we may endeavor to build up general conditions by proper diet and exercise, if there is some constant source of infection in the body, our efforts may prove futile. Resistance to infection will, of course, be greatly improved by proper hygiene.

All of which goes to show that in planning to live the healthful life and to get the best out of life, we must first thoroughly inquire into our bodily condition and remove all physical handicaps, whether they be mere disabilities or structural defects, such as posture, eye strain, flat foot, etc., or infective foci, that may carry the menace of chronic organic disease.

A consideration of the following tables will show the results of the periodic health survey carried on by the Life Extension Institute:

RESULTS OF THE EXAMINATIONS OF EMPLOYEES OF COMMERCIAL HOUSES, BANKS, ETC., BY THE LIFE EXTENSION INSTITUTE

Normal	3.14%
Imperfect—Advice needed regarding physical condition or living habits	96.86%
Not aware of impairment	96.69%
Referred to physicians for treatment	59.00%

CLASSIFICATION OF IMPAIRMENTS

Moderate to Serious

Organic heart disease	5.38%
Arteriosclerosis—thickened arteries	13.10%
High or low blood pressure	25.81%
Urinary—Albumin, sugar, casts	35.63%
Individuals showing combined disturbance of circulation and kidneys	12.77%
Nervous	.73%
Lungs—possible tuberculosis	.99%
Venereal	.46%

Minor to Moderate

Functional Circulatory—Rapid, slow or intermittent pulse	11.37%
Urinary (high and low specific gravity, crystals, indican, etc.)	21.62%
Digestive organs	6.12%
Constipation	14.70%
Nose and throat	34.53%
Ears	16.96%
Decayed teeth and infected gums	22.22%
Anemia	2.72%
Skin	6.38%
Errors in diet (pronounced)	13.70%
Errors in personal hygiene	31.60%

Physical Defects

Faulty vision, uncorrected	16.03%
Flat foot	3.19%
Faulty posture	7.38%
Rupture—no truss	1.79%
Overweight—important	5.45%
Underweight—important	19.16%
Unclassified	7.38%

The above table shows the percentages that the various impairments are of the whole number of employees examined. Many employees, of course, show several combined impairments. Average age 30.

The life insurance experience is along similar lines, but modified by several conditions: a higher average age, the purely voluntary self-selection of each individual examined, and the fact that many of these examinations were made in remote sections by less highly trained examiners.

RESULTS OF THE EXAMINATION OF LIFE INSURANCE POLICY HOLDERS BY THE LIFE EXTENSION INSTITUTE

Normal	2.40%
Imperfect—Advice needed regarding physical condition or living habits	97.60%
Not aware of impairment	93.04%
Referred to physician for treatment	65.75%

CLASSIFICATION OF IMPAIRMENTS

Moderate to Serious

Organic heart disease	4.50%
Arteriosclerosis—thickened arteries	6.27%
High or low blood pressure	23.50%
Urinary—Albumin, sugar, casts	53.60%
Individuals showing combined disturbance of circulation and kidneys	15.83%
Nervous	.92%
Lungs—possible tuberculosis	1.40%
Venereal	.77%

Minor to Moderate

Functional Circulatory—Rapid, slow or intermittent pulse	7.17%
Urinary	25.05%
Digestive organs	12.32%
Constipation	27.53%
Nose and throat	15.92%
Ears	10.30%
Decayed teeth and infected gums	11.76%
Anemia	2.69%
Skin	3.42%
Errors in diet (pronounced)	30.85%
Errors in personal hygiene	68.04%

Physical Defects

Faulty vision—uncorrected	5.51%
Flat foot	4.11%
Faulty posture	9.58%
Rupture—no truss	1.12%
Overweight—important	12.23%
Underweight—important	9.13%
Unclassified	12.30%

The above table shows the percentage that the various impairments are of the whole number of individuals examined. Many policy holders showed several combined impairments. Average age 35.

A Correction

In the April number of THE MODERN HOSPITAL, department of Life Extension, in the article on "Some Factors in Life Shortening," referring to the thinning of enamel, the reading should have been "the enamel is thinned to one-ten-thousandth of an inch."

A Second Ambulance for France

The illustration below is that of an auto-ambulance which is on its way to the battle fields of France as a gift from the Emergency Aid Committee of Philadelphia. The

Ambulance donated by the Emergency Aid Committee of Philadelphia.

chassis of this ambulance was won at a "Made in America" bazaar, by Mrs. Elizabeth Dobson Altemus, and by her presented to the Aid Committee. The ambulance was dedicated by Billy Sunday, the baseball evangelist, who has been conducting a revival in Philadelphia.

United States Army Field Hospital for France

The last Congress passed a law that made possible the recent purchase, through the Red Cross, of a completely equipped United States Army field hospital for the use of the American Ambulance in Paris. This field hospital weighs 16,000 pounds, can be transported on four motor trucks and has accommodation for 108 patients. Surgeons and nurses will be detailed from the American Ambulance in Paris, which also is to supply it with fifteen ambulances.

DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
Director of the Boston Dispensary.

QUESTION BOX

Shall Dispensaries Charge Fees to Patients?

The medical chief of an important dispensary has sent the following questions:

Question 1: What rates or fees are charged in various representative dispensaries?

Answer: The more representative dispensaries maintained by private funds charge patients nominal fees. Only a few such institutions charge no fees. The fee most commonly charged is ten cents, paid by each patient at the time of each visit. In some cases this fee covers also a prescription for medicine. An apparently growing practice is that it shall not include a prescription for medicine, but that medicine shall be charged for separately, usually at ten cents each prescription, with the more expensive prescription prices somewhat higher. A few dispensaries which have reported their fee rates to a committee of the American Hospital Association say that medicines only are charged for (at nominal prices), and that they have no admission fee. In some dispensaries there is an admission fee for the first visit only, ten cents or sometimes twenty-five cents. Five cents or ten cents is charged in most places for issuing a new card to replace one lost.

The Massachusetts General Hospital and the Boston Dispensary have adopted a fee system substantially uniform; twenty-five cents is charged adults for the first visit; ten cents for children, and ten cents for either adults or children, for all visits after the first; medicines are charged for at prices varying with the prescription, but usually at ten cents.

Operations requiring ether, dental treatment, x-rays, eyeglasses, braces, injections of salvarsan, etc., are usually charged for. At some dispensaries patients are charged ten cents for surgical dressings without an admission fee.

In general, it may be said that the use of a fee system is increasing, and that ten cents per visit is at present the usual rate, with an additional charge for medicines and special services. Of 163 dispensaries which reported their fee system to the American Hospital Association Committee on Out-patient Work last year, 44 charged patients no fees; 107 charged nominal fees, of which 51 or nearly half levied the rate of ten cents per visit. Three-quarters of the dispensaries not charging fees were small institutions, receiving less than 30,000 visits a year.

Question 2: To what use are the fees collected by dispensaries put?

Answer: To meet the expenses of the institution.

Question 3: What should be considered the legitimate use of moneys collected as fees from patients?

Answer: A dispensary doing charitable work cannot and should not expect to render efficient service and meet all its expenses from such fees. From 25 percent to 50 percent of the expenses can be met. The average cost per visit at an efficient out-patient department ought not to be less than twenty-five cents, and perhaps should be double that amount, assuming that the medical service is unsalaried. Charging fees is not only legitimate, but is desirable, provided that two conditions are met:

First: That no patient unable to pay all or part of any fee should be excluded.

Second: That the fees be applied to the improvement of the out-patient service, to provide better equipment or larger medical, nursing, social service and administrative staffs.

Question 4: In what way are the poor, unable to pay even a minimum fee, selected for free treatment: i. e., who decides who shall and who shall not pay the fees?

Answer: It might be said that the first charge upon the money received from fees should be the establishment of an efficient admission system, if such a system does not already exist in the dispensary. The admission of patients should be in charge of a single responsible person, for the whole dispensary. If the organization is so large that more than one admitting officer is required, they should all be under the direction of one who should be a permanent officer. This admitting officer or registrar ought to have the training of a social worker, whatever other qualifications he or she may possess. Experience proves that it is not necessary for a medical man to undertake this service, although medical training is not undesirable, provided permanency of tenure is assured and qualifications for eliciting and interpreting the social conditions of patients are also possessed by the person selected.

The person who admits to the dispensary must decide:

First: Is the patient a proper subject for dispensary treatment, i. e., can the patient afford to pay for adequate medical treatment of the disease or disorder from which he appears to suffer?

Second: To what clinic (if there are many clinics) should the patient be referred?

Third: Should the patient have the fee, whether for admission, medicines, or any other purpose, remitted in whole or in part? The responsibility for the remission of fees should be concentrated at the admission desk, under the person in charge thereof. Such concentration of responsibility will conduce to success in the admission of patients, the exclusion of undesirable patients and the judicious remission of fees.

Question 5: What is the relationship, if any, between the question of pay dispensaries and the so-called problem of dispensary abuse? Does the medical profession in general oppose the establishment of charges at dispensaries?

Answer: The question of charging nominal fees at a dispensary ought to have no relation to the so-called problem of dispensary abuse. Physicians who quarrel with dispensaries because they take patients who can pay private physicians cannot base their objection on the ground that the patient can pay a physician because he can afford to pay a ten-cent fee. A section of the profession in certain cities is opposed to dispensaries as such and, therefore, opposed to any system which tends to increase the support of dispensary work or improvement of service. This was clearly shown in New York City in the report of the County Medical Society in 1911. The objection to dispensary fees is only a pretext for the objection to dispensaries as a whole.

Question 6: Does the charging of fees have any appreciable effect upon the attendance at the dispensaries?

Answer: Apparently not. In 1913 the Massachusetts

General Hospital and the Boston Dispensary made a corresponding increase in their fees, beginning on the same day. Neither institution found any undesirable effect upon attendance.

Question 7: Do patients who pay small fees act with more self-reliance, and does the payment of fees make the treatment more valuable to them so that instructions as to general hygiene, diet, etc., are more carefully carried out?

Answer: On the whole, yes, so far as the testimony gained by those admitting patients appears to indicate. There is plenty of testimony on this point, showing that many patients would much rather pay a fee, even ten cents, than get everything for nothing. A dispensary in a town of middle size in Massachusetts, which recently established a fee system, gave very positive testimony as to the good effect observed upon patients.

Question 8: In so far as you know, does the collection of the fees make the average dispensary physician more conscientious in his work?

Answer: No direct effect has appeared. Indirectly, yes; for if fees are collected and used to improve the dispensary, improvement in the medical work will, of course, be noted. Whatever relieves the physician of work that does not properly belong to him, such as deciding the financial status of a patient, will tend to concentrate his attention upon and increase his efficiency in his proper field—the diagnosis and treatment of patients.

Dispensary Notes

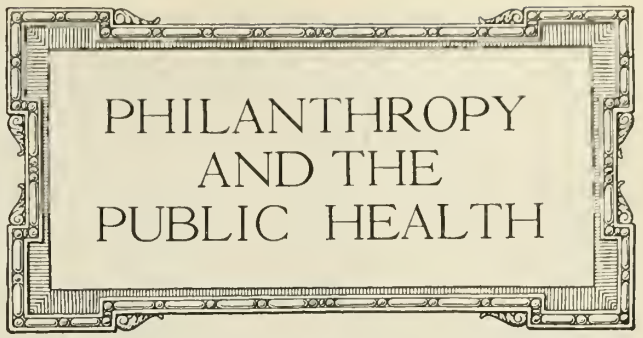
The Hartford Dispensary, of Hartford, Conn., will open a social service department May 1, 1915.

In the next session of the National Conference of Charities, to be held May 12-19 in Baltimore, Md., two subjects of interest to dispensary managers and workers will be taken up: "Dispensary Clinics for Venereal Diseases in Relation to Public Health Programs" and "Pay Clinic for Persons of Moderate Means."

In a paper by Dr. Lawrence Lee, published in the *American Journal of Public Health,* for March, 1915, the establishment of out-patient departments for negroes, treating prevalent diseases among negroes, is recommended. Statistics indicate that the general death rate among the negro population is twice as high as that among the whites. The frequency of certain diseases, syphilis and tuberculosis, for example, is enormously greater.

In a survey of the public health of the city of Topeka, Kas., conducted by a committee of citizens with the cooperation of the Kansas State Board of Health, the establishing of a dispensary maintaining three clinics is recommended as a public health measure: one clinic to deal with tuberculosis, a second with babies (these two being largely diagnostic and preventive in character), and the third with venereal diseases. It is recommended that such dispensary service be operated by the City Health Department.

The effect of color schemes on the minds of patients in sick rooms was appreciated long before the existence of organized hospitals. In the old records of the Hospital of the Knights of St. John in London, which was founded during the first crusade, is found the following: "For alle those wymen in childebed, for those languishing in melancholic fevers and all those who are downcast by ye weight of theire afflyction, lette the chamber in which they are couched be of most lightlie coloured walles and tapestrie, to fare the sufferer merrilie and welle."



THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director.
Department of Family Welfare.
DONALD B. ARMSTRONG, M. D., Director.
Department of Social Welfare.

How Dangerous Is the House Fly?

BY HOLLAND HUDSON

Is the house fly the chief carrier of infantile diarrhea, or has it more deadly rivals? Should some of that energy now expended in "fly-swatting" be distributed among other details of home hygiene, or should the hue and cry after this insect pest be redoubled in volume? Are unscreened windows more deadly than uncovered food and dirty floors?

The Bureau of Public Health and Hygiene of the New York Association for Improving the Condition of the Poor has devoted several months of each year since its organization toward the study of these questions. In the summer of 1913 it screened the windows and doors of an entire tenement block in an Italian quarter, and studied the health of its infant population as compared with that of an unscreened block of almost identical character and population. The apparent results made a bad case against the fly. Another experiment upon a much larger scale was soon planned, however, because the number of families in the initial experiment was not determinatively great, and also because the pioneer fly-prevention work had included an unusual campaign of general sanitary education.

The second experiment, directed by Dr. Philip S. Platt, Superintendent of the Bureau of Public Health and Hygiene, with the cooperation of the Department of Health, dealt with a thousand infants under one year of age at the time the work began, with parents of all nationalities. A census of these infants was made by six graduate nurses with social service experience, employed by the Bureau. A complete "case history" of each family was included. The sanitary conditions of the dwelling were noted, as well as the possibility of obtaining adequate cooperation from the parents in protecting the infants from fly infection. When this census was completed, the cases were evenly divided into a fly-protected and a fly-exposed or control group. The scale of sanitary efficiency in each group corresponded to that in the other: e. g., there were as many infants in clean, fair, and dirty homes in the fly-protected as in the control group. The even balance of this division was kept in every detail at all likely to affect infant health during the summer. Each group had the same number of large or small families, of twins, of diseased inmates, etc.

The thousand infants were divided among twelve nurses, six of whom were borrowed from the Department of Health. (The cooperation of the Department made possible an experiment of this scale.) The nurses were dis-

tributed among the language groups in which they had had previous experience. They were instructed to visit all cases every five days. The fly-exposed or control cases received all the instruction usually given in child hygiene work, but no special emphasis was laid on eliminating the house fly. The fly-protected cases, on the contrary, received special instruction in fly-prevention at each visit, and were supplied with literature, and with netting to protect the infants. Three supervisors, constantly in charge of the work, also visited each fly-protected case each week, gave extra instruction for preventing fly infection, and distributed fly paper. Both nurses and supervisors recorded the infants' health, the presence or absence of flies, and the use or neglect of netting over the infant. In addition to this, the nurses kept record of exposed food and milk, of feeding methods, and of the cleanliness of the homes.

The records of nurses and supervisors, covering a period of thirteen weeks, have been most carefully compiled and analyzed. They have been studied from the point of view of feeding methods, of temperature and humidity conditions, of nationalities, of home sanitation, and of recent diarrheal history. The fly-protection efficiency has been standardized, and the actual results of this protection isolated to a degree not attained in any previous experiments of this nature.

A preliminary report on the experiment sets forth the following significant essentials:

Flies in clean homes. 1. In clean homes the diarrheal sickness among fly-exposed cases was not appreciably greater than that among fly-protected cases. (This tallies with the fact that few flies enter clean homes, and that their cargo of bacteria is usually less when captured in clean homes.)

Flies in dirty homes. 2. In dirty homes the diarrheal sickness among fly-exposed cases was twice that among fly-protected cases.

Flies. 3. There was more than twice as much diarrhea among all fly-exposed cases as among all fly-protected cases.

Dirt. 4. There was almost twice as much diarrheal sickness in all dirty homes as in all clean homes.

Flies and dirt. 5. Two and a half times as much sickness among infants, and three and a half times as much diarrhea occurred among fly-exposed infants in dirty homes as among fly-protected infants in clean homes.

The important influence of feeding methods has been as carefully measured as the influence of flies and dirt. It does not, however, affect materially the accuracy of the figures given.

More than forty minute tabular analyses have been made from the nurses' reports. A pamphlet summarizing these analyses and the Bureau's interpretation, written by Mr. Philip S. Platt, who directed the experiment, will be published shortly by the New York Association for Improving the Condition of the Poor. The Bureau of Public Health and Hygiene does not pretend that this study is final or conclusive. The experiment represents, however, more than thirteen weeks of systematic and conscientious field work, the records of which have been studied with the utmost regard for precision, for impartiality, and for the complete isolation of each contributory factor. Its purpose has been not to settle the fly problem in a single summer, but to contribute some precise and credible evidence gathered by the application of laboratory methods to field work.

UNIQUE TUBERCULOSIS HOSPITAL

Detroit Plans $400,000 Building in Which Special Provisions Are Made to Segregate Patients by the Stage of Their Illness

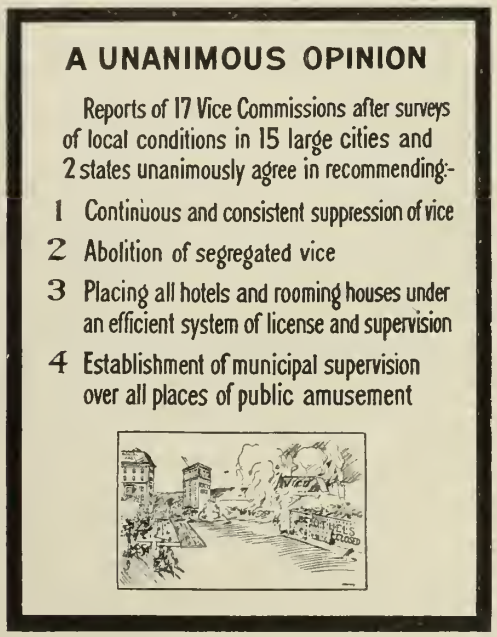
Plans for a tuberculosis hospital to be erected by the city of Detroit at a cost of $400,000 call for an eight-story building to accommodate 345 patients. Louis Kamper is the architect. The building will be of buff colored brick with Bedford stone trimmings. The center will be of solid brick construction, but the sides will consist largely of steel sash, so that practically the entire building can be opened to the air. According to the general scheme of the hospital, patients in advanced stages will be housed in the second and third floors. To the end that there can be a gradual weeding out of patients as their condition becomes worse, so other patients will be spared seeing them, the wards in which serious cases are placed will be of decreasing size. A patient in the final stages will occupy a private room. Incipient cases will be cared for on the fourth and fifth floors, where a process of elimination will be followed. Cases that will soon be discharged will be cared for on a large porch on the sixth floor.

SOCIAL HYGIENE
VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
General Secretary, The American Social Hygiene Association,
105 West Fortieth Street, New York City.

Progress in the Prophylaxis of Venereal Diseases

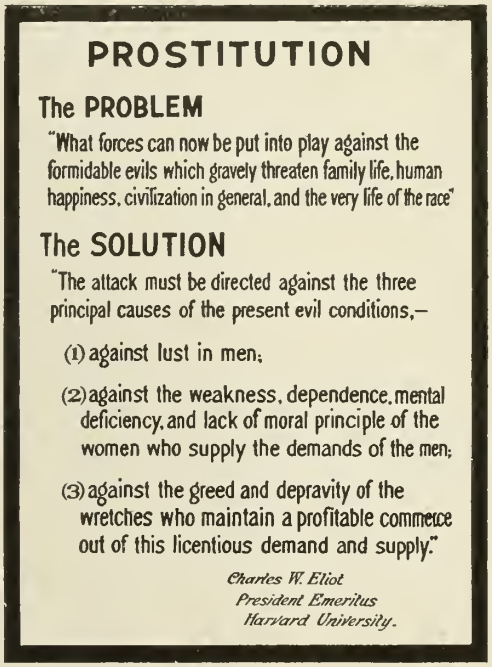
Nearly every country in the civilized world has now begun some effort toward reducing the prevalence of venereal diseases, and increasing progress may be expected in the future. In certain countries these efforts are yielding good results; in others the work is not seriously regarded or fails to be properly adapted to the general preventive medicine program of those countries. A wider recognition is, however, being accorded to the fact that not only must the facilities for treatment be increased for the benefit of individuals contracting venereal diseases,


A UNANIMOUS OPINION
Reports of 17 Vice Commissions after surveys of local conditions in 15 large cities and 2 states unanimously agree in recommending:-
1 Continuous and consistent suppression of vice
2 Abolition of segregated vice
3 Placing all hotels and rooming houses under an efficient system of license and supervision
4 Establishment of municipal supervision over all places of public amusement

but for the protection of the public through treatment minimizing infectivity. This leads to recognition of the necessity for making the conditions of early diagnosis and treatment as informal and simple as possible in order to encourage all persons voluntarily to seek advice and treatment. That this view is practical has been best demonstrated by Denmark.

Denmark has a population of 2,750,000, with one large city of 500,000, Copenhagen, and a number of provincial towns under 60,000 inhabitants. Thus Denmark compares in many ways with many states of this country. Since 1789 patients suffering from venereal diseases have had free access to hospital treatment if they were indigent, but in the last twenty-five years the appreciation of venereal diseases as a great public health problem has brought about the extension of the best medical and hospital service gratuitously to all persons throughout Denmark regardless of ability to pay. Free medicines are also provided if necessary.

It is estimated that about four-fifths of the venereal cases occur in Copenhagen, and that more than one-half of the fresh cases of syphilis are treated in hospitals. The majority of the venereal in-patients are from the working-classes and the lower middle class, many of them being citizens of foreign countries. The hospitals provide for these cases an average of one bed for each 1,500 inhabitants. A syphilitic case remains six weeks as a rule; approximately fifty percent of the hospital cases are syphilis in the primary and secondary stages. It is significant that late manifestations of the disease are now sel-


PROSTITUTION
The PROBLEM
"What forces can now be put into play against the formidable evils which gravely threaten family life, human happiness, civilization in general, and the very life of the race"
The SOLUTION
"The attack must be directed against the three principal causes of the present evil conditions,—
(1) against lust in men;
(2) against the weakness, dependence, mental deficiency, and lack of moral principle of the women who supply the demands of the men;
(3) against the greed and depravity of the wretches who maintain a profitable commerce out of this licentious demand and supply."
Charles W. Eliot
President Emeritus
Harvard University.

dom seen in the Copenhagen hospitals. The cases are treated in the general wards for skin diseases, and in all respects are accorded the same attention given any other patient. The total number of hospital days for venereal cases is over seventy thousand per year and approximately $65,000 is spent annually on this service. This is nearly one-ninth of the total hospital budget for Copenhagen. The out-patients are provided for either by attending physicians of the "public consultation rooms," or by free treatment by appointed "medical practitioners." The consultation rooms are open for "diseases of the skin" daily for two hours in the morning, and according to a schedule of evening hours each week. Two of them are attached to large hospitals, but the others are situated in ordinary houses near the principal streets. Each consists of a waiting room, a consultation room, and a minor treatment room. A woman attendant is provided. They were originally opened to carry on follow-up work with patients discharged from the hospitals, but an increasing amount of advisory and educational work is developing in connection with them. This plan is being extended and will probably eventually replace the practitioner system. At present there are twelve physicians employed, two of whom are women. As an average these physicians receive $520 per year. The total expense of operation is approximately $11,000 per year. Thus an expenditure of nearly $80,000 annually for dispensary and hospital treatment is author-

ized by Copenhagen. Possibly treatment of two-thirds of all the venereal cases is included in this public expense.

It is evident that this plan is supported primarily as a protection to the public rather than as a charity to the unfortunate victims of venereal disease. The law requires every person suffering from contagious venereal disease to seek medical treatment, and ample facilities are afforded for compliance under proper conditions and with due regard to the privacy recognized in other diseases. All cases are reportable to the health officer, who has power to compel attendance at the public consultation rooms, or compulsory admittance to a hospital. The records show that this law is actually enforced.

Every physician is required to report weekly all his cases of contagious diseases, including venereal cases, but the name and other data concerning the latter may be omitted if they remain under his care. Statistical data in Denmark, as elsewhere, are open to error, but the system in operation seems conclusively to have materially lowered the prevalence of venereal infections throughout the nation.

It is interesting that this medical attack upon the problem has developed without conflict or handicap from the movement to abolish segregation or regulation of prostitution. Many of the medical men in Denmark believe that the abolition of regulation has not increased venereal disease, but on the contrary has aided the preventive medical work. This is important because it has often happened that efforts to encourage reporting and early treatment of venereal diseases have been held to limit the right or wisdom of promoting suppression of prostitution and especially of its less flagrant forms. As this form of vice is the largest contributor to the spread of venereal diseases, the work for its suppression and for the single standard of morals for men and women bears directly on the reduction of their prevalence. The experience of Denmark would indicate that there is no real difficulty in requiring public health and police authorities to work harmoniously for reduction of venereal disease on the one hand and for maintenance of public morality on the other.

TO TEACH SEX HYGIENE TO YOUTH

American Social Hygiene Association Offers Large Prize for Best Pamphlet With Which to Teach Sex Relations to Young People

There has come to be among thinking people who are interested in the progress of human welfare generally a substantial agreement that some form of sex enlightenment must take the place of the old-time "policy of silence." Education, it is recognized, ought to give to every man, woman, or child the command and comprehension of such facts as are essential to his welfare; among these are the facts of sex and reproduction. Religion begins to recognize that the decrees of faith and of conscience are strengthened, not weakened, in the realm of sexual morality by knowledge of the facts of nature and science. Medicine, concerned with the health problems of venereal diseases, finds its ally in popular knowledge of their causes and consequences, and looks to moral and religious sanctions to add force to knowledge. So sex instruction becomes the servant of the great forces which seek the advance of humanity from generation to generation.

The following statements in reference to sex instruction by educators and physicians may serve to illustrate some of the latest opinions in regard to what should be its purposes and scope:

"Sex education should be understood as including all scientific, ethical, social, and religious instruction which aims to help young people prepare to solve for themselves the problems of sex which inevitably come to every normal individual.

"For emphasis, let me briefly summarize these aims of sex education: (1) serious, scientific, and respectful attitude of mind on sex questions; (2) personal sexual hygiene; (3) social and ethical and eugenic responsibility for sex actions; (4) relation of immorality and social diseases. I have deliberately placed these educational aims in this order because it is the order of greatest permanent importance in the sex-education movement; it represents the greatest value to the largest number of individuals who may learn the scientific truth, and it is the order most natural, most logical, and most effective in pedagogical practice with young people.

"We should stand for the scientific instruction of all young people in matters concerning sex, because it is certain that such knowledge will function completely in many lives and will work appreciable good in many others.

"Sex education deals with problems which the normal human life cannot possibly avoid and which each individual must be prepared to solve for himself. Therefore we may confidently assert that instruction concerning the most important aspects of sex processes and relationships has come to stay, and that it will soon be recognized as an absolutely necessary part of a rational and efficient scheme for the education of young people.

"MAURICE A. BIGELOW,
"Professor of Biology, Teachers' College, Columbia University."

"One of the most important results of sex education, in the case of adults as well as of children, is the giving them a decent vocabulary in which to discuss the subject of sex and sex hygiene. The terminology picked up in the street is the only terminology which all but educated adults are familiar with, and it is the only vocabulary which children hear who get their knowledge of sex from impure sources. The terminology of science is the only terminology that is free from indelicate associations, and the very first condition of success in sex discussion, either with young people or with adults, is to give them a vocabulary free from these associations.

"THOMAS M. BALLIET, PH. D.,
"Dean of the School of Pedagogy, New York University."

"Certain general principles underlie the presentation of sex instruction by teachers:

"1. It should present normal relations rather than the pathological, the sane and happy and not the diseased and abnormal.

"2. It should be constructive and positive in plan and not critical and negative. It should aim to build up and conserve those normal inhibitions of reserve, modesty, chivalry, and the normal allegiances of lovers, husbands, and wives, and of parent and child. It should say 'do' and not 'don't.'

"3. It cannot be divorced from moral and ethical motives, and might well be strengthened by religious ones also.

C. A. KOFOID, PH. D.,
"Professor of Zoology, University of California."

"The educational impulse in the social hygiene movement involves many complex features and is a field to which medicine can and must increasingly contribute. Here, too, the physician has decided limitations. Whether mothers, misinformed, and this perhaps by their husbands, shall continue to whisper into the ears of their daughters that falsehood, that the men who seek their daughters' hands in marriage have by some physiological compulsion foreign to the female sex, been driven to indulge their lustful appetites with the necessary exposure to disease, and whether boys and girls shall be instructed at a very early age in matters of sex hygiene—these are problems for the educator and moral and ethical teachers.

"ARCHIBALD MCNEIL, M. D.,
"Chief of the Venereal Clinic, New York City Department of Health."

"The real strength of the social hygiene movement of today lies in the cooperative activities of the great religious, social and educational organizations. They are striking the evil at its source; not by driving the prostitute into the street and then out of it again, but by preventing our young girls from becoming prostitutes, and our young men from preying upon them. This they hope

to achieve by informing the mind so as to banish prurient curiosity, by diverting the imagination to emotions joyous and clean, by exercising the body in playgrounds and dance halls that are safe, and above all by inspiring the soul with the highest religious and family and civic ideals. To turn lust into love, 'into the enthralling love of mate for equal mate, into civic love for freedom, home and state, into the eternal love of God and of all things create' —such is our aspiration.

"Edward L. Keyes, Jr., M. D.,
"President of the Society of Sanitary and Moral Prophylaxis."

"The educational campaign which has been conducted by the Metropolitan Life Insurance Company for a number of years has proven that it is possible to present the basic facts regarding health and disease and in particular the care and prevention of the latter in such a fashion that even the man on the street will become interested and will follow the instruction which is given to him.

"The question at issue is this: Can the social hygiene program be similarly popularized; can pamphlets or literature of any kind be placed in the hands of the great masses of workingmen and women in the United States written in a popular way and yet not give offense? . . . The opportunity for the Social Hygiene Association is at hand. The association may rest assured that whenever literature can be presented which will meet the requirements mentioned above, which can be distributed in the average American home without danger, and which in a dignified, ethical way will present the fundamental principles which this association advocates, insurance companies generally will be only too glad to cooperate with them and utilize the machinery at their disposal for the distribution of such literature among the millions of men, women and children in the United States, who today are policyholders in the life insurance companies.

"Lee K. Frankel, Ph. D.,
"Sixth Vice-President of the Metropolitan Life Insurance Company."

Following out the suggestion of Dr. Frankel, The American Social Hygiene Association has been offered a prize of one thousand dollars by the Metropolitan Life Insurance Company for the best original pamphlet on social hygiene for adolescents between the ages of twelve and sixteen years, approved by a committee of judges to be selected by the association under the conditions outlined at the end of this article.

In offering this prize The American Social Hygiene Association is presenting a problem for solution by writers in the social hygiene field. No suggestions or restrictions as to methods of presentation or treatment of the subject-matter are made. It is, perhaps, unnecessary to say that accuracy of statement, such use of statistics and quotations as is warranted by the context from which they are taken, broad and practical grasp of the subject as presented, soundness of pedagogical method, and attractive and convincing form are among the important points to be considered in judging the merits of manuscripts submitted.

The questions most frequently asked by those interested in the competition are: "What kind of pamphlet is wanted? Is it to be written for boys, or for girls, or for both—or for parents? Must it cover the entire period of the four years specified? Must it take up the physiological changes of adolescence? What sort of instruction may the author assume that the child has had before reading the pamphlet?" To such inquiries the reply is that the prize has been offered for the best solution of the problem of approaching through the printed word the youth of America from twelve to sixteen years of age. If the author is convinced that the indirect approach through the parent is the proper method, he may prepare his manuscript for use by the parent. If he thinks that the most pressing need is for a pamphlet to be placed in the hands of boys, he may prepare his manuscript for that purpose. Similarly, he may prepare it for the use of girls, or, if he thinks it more desirable, he may combine his information into a single pamphlet for the use of both boys and girls. If he believes that adolescents from twelve to sixteen years of age do not form a practical group, he may direct his effort toward any portion of this age group (for example, those from twelve to fourteen years, or those from fourteen to sixteen years), and may so indicate. He may submit his manuscript as one of a series designed for special groups, but should present also the other numbers of the series to show its character as a whole. Notes explaining the points of view from which it has been prepared may be submitted with the manuscript, bearing the same identifying mark or pen-name, but not the name of the author.

It is generally recognized that the early adolescent period in the life of both boys and girls presents one of the most difficult problems in educational work. In the special fields of instruction or education with which the social hygiene movement deals, this period is probably the most difficult. There is substantial agreement as to what information ought to be given the young child and as to the desirability of thorough, scientific instruction touching on the problems of sex and reproduction for persons of mature years. But the problem of the early adolescent period still awaits a satisfactory solution.

Competition for this prize is open to all.

The Metropolitan Life Insurance Company desires to use the winning pamphlet among its industrial policyholders.

The committee of judges will conduct the competition in accordance with the following conditions:

Contest closes July 31, 1915, at midnight; any manuscript received later will not be considered.

Manuscripts should not exceed 3,500 words, and must be in English and must not have been previously published.

Manuscripts must be typewritten on one side only of plain white paper 8x10½ inches.

Manuscripts must be paragraphed and punctuated for submission as "copy" to printer.

Each manuscript must bear some identifying mark or pen-name, but not the name of the author.

The author's name and address, and the identifying mark or pen-name should be in a sealed envelope, accompanying the manuscript; the face of the envelope should bear the mark or pen-name only.

More than one manuscript may be submitted by the same author.

The winning manuscript, in consideration of the award of $1,000, becomes the property of the donor of the prize, all rights therein being surrendered by the author.

The right to purchase any manuscript submitted, at the rate of 5 cents a word, is reserved by the Metropolitan Life Insurance Company and by The American Social Hygiene Association.

Any manuscript not winning the prize or purchased will be returned to the author if return postage is provided.

Address manuscripts and requests for further information to

The American Social Hygiene Association,
105 West 40th St., New York City.

In India, in the fifth century before Christ, it was the Hindoo custom for physicians to have female attendants who were chosen from a religious body of women sworn never to marry, and who waited on the women patients who were in need of medical attention. These nurses, by bath and massage, prepared the patients for examination, and assisted the physician in his care of women, especially after childbirth.

LETTERS FROM OUR FIELD EDITORS

HEALTH WORK UNDER DIFFICULTIES

Famous Nurse "Sister Bailey" Writes of Her Experience on the Outposts of Labrador, a Delayed Letter

Forteau, Labrador, Dec. 1, 1914.

I must hasten to send you some news before the ice shuts us in for the winter. I am quite unaccustomed to telling my own experiences, and there is so little nursing compared with the many other and varied duties, that I scarcely know where to begin.

You may be interested to hear how this little branch of the Mission was started. After three years of service at Battle Harbor, Dr. Grenfell asked me to spend the winter here because he thought the people sadly needed medical assistance. The first winter I lived with a dear old couple who were fine, practical Christians, and very anxious that a branch should be started at Forteau. They gave the land on which to build the house. The following spring Dr. Grenfell decided on a new experiment, and I decided to do my best to make it a success. To use the doctor's own words: "Just as we decided to begin, a strange coincidence happened. I was a guest of one of the professors at a large American college. During the civil war between the North and South he had served the northern side against slavery. To my surprise, one day he said: 'I want you to tell me how I can help the south coast of Labrador. Over forty years ago, when invalided from the army, I went to sea in a Gloucester banking schooner to try to regain my health. During the voyage I found that the crew were all Southerners in sympathy, and almost the first time that I walked ashore on the Labrador coast they sailed away and left me marooned. I had nothing left and no way to get credentials. The clothes I stood up in soon wore out, and to say that I was a gentleman out for a holiday seemed preposterous. Yet the Labrador people, without exception, dreadfully poor as many of them were, treated me with hospitality beyond belief, and even gave me clothing from their scanty supply. Ever since I have hoped I might live to acknowledge in some way their kindness to me. What can I do?' 'Provide the material for a cottage for the nurse, right in the center of the district through which you traveled,' was my answer. The professor gave a thousand dollars; the ground was cleared, the cottage was built, and each year since some improvements have been made."

In the fall of 1908 I arrived here with two Eskimo children, Kirkinah, the little legless girl, and Noah, who was just recovering from an operation for empyema. He is now in the Orphanage at St. Anthony doing good work.

The house was not ready, so we were obliged to stay for a few weeks with Mrs. James.

The schooner that was to bring the furniture became ice-bound and we were obliged to make the best of things and "smile" at the storm!

By the last mail-boat going to Battle I was able to secure mattresses and blankets. You would have been amused to see the way in which we rigged up a home for the winter. Dark blankets made a floor covering. Lard pails made good saucepans, until they sprung a leak! Lids of biscuit tins made baking tins; sugar tins cut in half were used for baking bread. These, with a few things I borrowed from a neighbor, completed our home. You can imagine how glad I was to see my furniture arrive in the spring, when Mrs. Sayre and her son and several young students came along just in time to help me out. For two weeks we were all hard at work, putting down floor covering, hanging sanitas, and unpacking furniture.

Such inconveniences only teach one to be ingenious, and make one more sympathetic with those who suffer poverty for a lifetime.

It is absolutely necessary that a nurse in Labrador should know how to adapt herself to circumstances. Nurses in England and America, who are accustomed to the smooth working of a well-arranged hospital, would find their ingenuity sorely taxed in trying to start a nursing station on the Labrador coast.

Despite the inconvenience, every new day held an opportunity for doing good, and I would not have missed the experience for anything.

Fig. 1. Sister Bailey, who, as a nurse, has seconded Dr. Grenfell's good work among the Labrador folk.

I had no sooner arrived than people began to come along. Some out of curiosity, some because they wanted to give me a warm welcome, and others needed medical assistance.

Immediately after my arrival I had to cope with an outbreak of scarlet fever. Only a few were fortunate enough to escape its grasp.

Soon after, a telegram came requesting me to go to the lighthouse to hold an inquiry on a young Marconi operator, who had suddenly fallen dead on his way to the mail-boat. He was going to spend the winter with his mother in England.

I had to wade seven miles through deep snow, as it was impossible to go by boat or dog team. When I reached there, nine hours after his death, he was still fully dressed. The man with whom he stayed would not have him moved until I arrived to examine the body.

Not long after that I received an urgent call to see a boy who had shot his arm.

The men had been wiring to Blanc-Sablon for me to go at once to Lance-Au-Loup. I was then on my way home from that place, and having tramped about ten miles round shore on slippery ice, I was very tired. Lance-Au-Loup is six miles from Forteau across the bay. We arrived there just as it was getting dark. I will not try to describe the "pickle" the poor boy was in. I brought him to this station and had to keep him nine days before I could send him to Battle to get his arm amputated. (I'm telling you these things because you asked for my experiences!)

In my work I come in close contact with ignorance and superstition, and a long train of sorrow that goes with them. Our main difficulty out here is that the people, first of all, try all sorts of noxious remedies and hope against hope that their sickness will disappear; and often they do not seek medical advice until it is too late and life is threatened. We have tried to help the people to make an effort to secure the conditions which promote good health, and to make them understand that well ventilated houses would stop a good deal of sickness. The rooms are dark and

Fig. 2. Sister Bailey's house as it is now.

stuffy, and it makes one's heart ache to see so many lives slipping away through poverty and ignorance.

A few weeks ago I was called to visit a dying woman. She had fallen a victim to consumption. Ignorance and misery reigned supreme, and the poverty-stricken place told plainly what life had meant to her. An effort to save her was useless.

In another house I saw three children huddled together over a stove, their faces were white and pinched, and they were dressed in rags. Just as I was having some underclothes made to fit them I received some bales from England and America. The mother is very incapable and the father does not like work.

Most of the people along this part of the coast are thrifty and industrious and do not like to parade their poverty.

One night I was just getting ready for bed when a man came to ask me to go to see his little boy. "I wonder what's the matter with him, Sister? He's never been like this before," said the father. The father came out of the woods in a bath of perspiration, yet the frost seemed to penetrate his clothing with its icy breath, and this delicate, sickly child shrank before it and became chilled through and through. I discovered that he was suffering from pneumonia. For ten days he was unconscious, and his cold, powerless little hand told plainly that he was paralyzed. The poor mother, who is also delicate, stood with me beside the bed. She could not weep, but now and then sighed deeply, as she alternately looked at her boy and at me. Through the long night her trouble was too deep for tears, but in the morning a flood of tears welled up to her eyes when she spoke of the child's suffering.

For the past five years he has not escaped without some sickness, and to-day he is hopelessly paralyzed on the right side and mentally deranged. A great writer once said, "He who has seen only a man's misery has seen nothing; he must see the misery of a woman. He who has seen a woman's misery has seen nothing; he must see the misery of a child." This poor woman who is forced to witness the sufferings of her little one, says: "If it's God's will I must bear it bravely!" I have learned many lessons from these people with their simple faith and trust in God.

After living in this tiny cottage for a year, I found the building was absolutely inadequate for the work. In the fall of 1909 a cellar was added and the house and grounds railed in. Spring 1911 a garden was dug and outside the garden a large number of huge rocks were cleared, which served to make a border for the road leading up to the house. To make a garden we were obliged to get soil from the hills at the back of the house. Now I am able to raise a few vegetables, such as cabbage, potatoes, lettuce and radishes.

In the fall of 1912 the house was enlarged; the roof was raised, and four rooms added to the building. This gives us a ward large enough to hold five bedsteads and a good-sized room for industrial work. A large store has also been added to the building. This is joined on to the pantry, so that we have no need to go outside to get to it in the cold weather.

In the fall of 1913, just before I left for England, a porch and balcony were built, and I secured a second-hand shed for storing coal this fall.

We have now a compact and convenient station. A man told me the other day that the building was worth $2,000 instead of $1,000, and I am really proud of it, but please don't tell anybody! During my furlough I was able to collect some money to go toward a heating plant, which will be installed next week.

We have also started a new industry here in the shape of artificial flowers, made with the best material. I sincerely hope to make this a success. Shall I send you some samples? Perhaps you could send me some customers from the States! I mean to sell them if I have to act as peddler myself. My chief work, however, lies in caring for the sick. The dispensary is open from ten till twelve each morning, and from six till nine in the evening.

In the afternoon I visit the sick ones and attend to any odd jobs. Men bring wood, make roads, land freights, coal, etc., and do all kinds of work in return for clothing.

During the winter I travel up and down the coast several times, visiting every settlement between Red Bay and Long Point, covering in all about five hundred miles. In a case of sickness the men bring their own teams to fetch me and bring me back. During the summer I go in boats. The men come to fetch me, and, more often than not, the fishing boats are covered with fish slime, and are so leaky that it is necessary to keep bailing out the water. I have not yet been able to secure a motor boat, which would be a great blessing to this branch of the Mission.

We are able to help, in many ways, the suffering poor along this part of the Labrador coast. Women get clothing in return for washing, mending, cleaning, mat making, basket making, knitting, etc. Help is not given indiscriminately, nor do we believe in pauperizing the people, but try to teach them the value of self help.

In the winter months different classes have been held, including first aid to the injured club for boys and girls, and a soup kitchen has been open once a week for the poorest. Now the girls are learning to make artificial flowers, and seem to get on fairly well at it. We are simply trying to do the King's business in the King's way.

I have had many interruptions while trying to write you, so please excuse scrappy bits in the letter.

Yours sincerely,

FLORENCE H. BAILEY.

ROCKY MOUNTAIN HOSPITAL NEWS

Wheatland Hospital Is Unique—Dr. Maghee's Work at the State School for Defectives—St. James Hospital at Butte

Dr. Fred W. Phifer, the owner of Wheatland Hospital, has given us a very interesting description of a private hospital, which is well run by a physician who has his own private practice as well as patients in a hospital under his care. He says in part: "It might be of interest to mention that the hospital is happily located on a side street, which is quiet, but only a block from the main business district of the town. The central part of the building houses not only the administration rooms of the hospital but also my offices. It has proved a practical working scheme for a privately owned hospital, affecting a saving in room, in operating expense, and in my own time and effort. It saves the time and trouble of my patients also, and seems to meet with the general approval of the public. My assistant acts as the hospital resident physician, so that there is always a doctor at the call of the nurse in an emergency; and yet there is always a doctor to attend to office patients, so that they are never disappointed. This is the center of a large and widely scattered community, and I have found it impossible to train them to rigid office hours; and besides it has been impossible for me to keep rigid office hours, answering so many outside calls on my time. The present arrangement has been a great relief.

"One bookkeeper attends to the clerical work of all kinds; the salary of an office nurse is saved; one janitor is all that is necessary; telephone service is simplified, etc. I go into such detail, because I have not happened to observe this system worked out elsewhere; perhaps it is the favorable building site that accounts for its success here.

"We employ only graduate nurses, and so far have found this much more satisfactory than the pupil nurse system, of which we had experience in the east."

With the completion of a large addition now under construction, the hospital will be the largest privately owned hospital in Wyoming and one of the largest in the west. It will have forty wards and a capacity of 75 bed patients. All of the desirable features of the best hospitals are included in the plans, and in equipment the local institution will be unsurpassed in the west.

All of the wards are planned so as to get the sun the greater part of the day, having either a western or southern exposure, and will open on an enclosed court, entirely sheltered from the wind, but open to the fresh air and sunshine. This court is cemented and so arranged that bed patients may be wheeled out into it during the pleasant part of the day.

A sun room with a west front presenting fifteen feet of glass from floor to ceiling, for the use of convalescents and as a rest and visitors' room, is provided. An isolation section will be provided for use especially in maternity cases.

DR. MAGHEE'S WORK WITH EPILEPTICS

One of the most interesting subjects among the innumerable and varied branches of the study of medicine is that of mental defectives—epileptics and feeble-minded.

With no experience in the treatment of this class of cases, but with forty odd years of wide-reaching experience as a general practitioner, Dr. Thomas G. Maghee, the Superintendent of the Wyoming State School for Defectives, took up the work of treating this terrible malady, and believes that in the treatment of epileptics he has stumbled upon a system which has produced some remarkable results. To use his own words: "There are among others, five cases from ten to fifty years of age, of hereditary or congenital origin, all of that chronic, obdurate type which heretofore has not responded to any of the many forms of treatment. Their aggregate number of seizures have been from 271 to 384 per month, previous to November. About the fifth of November they were placed under the present system of treatment. To my surprise the aggregate seizures for November fell to 123; in December there was a further decrease to a total of only 14. In January but 20 occurred, the slight increase being because of suspension of treatment for one patient. In February the total number of seizures of these cases is but six."

Dr. Maghee believes that a great help in the treatment of cases of this kind is plenty of good food—the best that money can buy, cooked and served excellently and in abundance. The motto of the school is happiness first, and all else follows. In consequence, they have never had enough sickness among the pupils to need a regular nurse.

He has also obtained a great deal from THE MODERN HOSPITAL, for, as he says, "With the good suggestions and information obtained by perusing your invaluable journal, my efforts have been for the betterment and modernizing of the institution in every possible manner."

ST. JAMES HOSPITAL, OF BUTTE, UNDER THE CARE OF THE SISTERS OF CHARITY

St. James Hospital, of Butte, Montana, was erected in 1881 and consisted then of a two-story building. Four years later its capacity was doubled. In 1898 a third addition was completed and a new operating room opened with all modern equipment. In 1906 a fourth, and in 1913 a fifth, addition was made. At the present time St. James Hospital has a capacity of 160 beds, is equipped with three operating rooms, large and well-fitted dispensary, laboratory and a new and complete x-ray machine. In fact, everything necessary for the scientific practice of medicine and surgery is available.

The hospital is well located, being within easy reach of all parts of the city, as well as near all depots. During the year a relatively large number of fractures of all kinds were treated. A majority of these were cases coming to the hospital from the many mines, and it is of particular interest and value to note that although a large proportion of the fractures were compound, yet a very small percentage of these showed any signs of infection. This may largely be attributed to the fact that, during the last year especially, the mine companies have been carrying on an educational work of high value among the miners, on "safety first" and first aid to the injured. It is through this means that the number of mine injuries is greatly lessened year by year and also the danger of infection minimized. Every mine subscribing to the St. James Hospital is equipped with emergency outfits and cases are handled carefully and aseptically pending the arrival of the hospital surgeon.

MOSES COLLINS.

LETTERS TO THE EDITOR

Lumber Good and Plentiful

To the Editor of THE MODERN HOSPITAL:

I was very much interested in reading in the March issue of THE MODERN HOSPITAL an article entitled "Worthless Lumber on the Market." Evidently the "Iowa Trustee," who seems to have had an unpleasant experience in using lumber, did not look into the matter very carefully before he placed his order and fell into the hands of some unreliable concern. It is unfair for him to condemn lumber as a whole, simply because he was unfortunate enough to get a poor lot of stock.

I hope you will pardon the suggestion, but it seems to me that it would be vastly better for all concerned if in answering him you had taken the trouble to investigate a little and learn whether or not he could buy good lumber at reasonable prices. As a matter of fact he can buy as good lumber today as he ever could. The trees that are growing today are just as good as those of the past, and which have already been cut down and sawed into lumber. The quality is just the same and with modern appliances for manufacturing and preparing lumber for use, the results should be just as good. Modern equipment has made it possible for the lumber manufacturer and planing mill operator to give the finished product to the consumer in perfect condition.

I think you did your anxious inquirer an injustice not to investigate and give him some real information. There is nothing so cheap and free as information. It may surprise you to learn that the production in the United States today is close to forty billion feet and that there are probably 40,000 saw mills in operation, and thousands of reliable concerns distributing the stock to the ultimate consumer. Why, then, suggest the possibility of getting better stock by securing second-hand lumber and reworking it? Doubtless the lumber would be absolutely sound and in good condition, but the fact that it has been used once and probably worked to special pattern and perhaps driven full of nails makes it rather undesirable.

I hope you will take this letter in the spirit in which it is written and will not think that I am making an effort to call you down or criticise your methods. I do not doubt that it is the purpose of your publication to serve your subscribers and give them the information for which they ask, but I do think that in this instance you failed utterly to do so.

W. H. WELLER,
Secretary The Hardwood Manufacturers' Association of the United States, Cincinnati, Ohio.

Another Criticism on Lumber

To the Editor of THE MODERN HOSPITAL:

I note in your issue of March, 1915, in answer to a Trustee of an Iowa hospital, an editorial statement that it is impossible now to buy well-seasoned lumber. You state: "Lumber is rapidly disappearing, and those who have it still, find a ready market at exorbitant prices," etc.

As a matter of fact, the lumber business has not been at such a low ebb for many years, nor have the prices been as low. You have in St. Louis a large number of lumber manufacturers, some of whom you must know. May I suggest that you make some inquiry and correct the radical error into which you have fallen?

I am building a large hospital here, which I present to the Union Benevolent Association, and have no trouble whatever in getting thoroughly seasoned lumber. The difficulty experienced by your Iowa correspondent is due entirely to his local dealer.

JNO. W. BLODGETT,
Grand Rapids, Mich.

Preparing New Lumber for Use

Chicago, Ill., March 17th, 1915.

To the Editor of THE MODERN HOSPITAL:

This letter is written chiefly because the information you gave, in commenting on the communication from "An Iowa Trustee," printed in your March issue, is detrimental to users of lumber and particularly to those who build and operate hospitals.

Unfortunately the rosy commercial picture you draw of the condition of the lumber trade does not fit the current situation. You say: "The trouble is that lumber is rapidly disappearing and those who have it find a ready market at exorbitant prices; consequently lumber mills are working overtime and nearly all of them have equipped great drying kilns where they wheel in carloads at a time."

It would be an excellent thing for the country if there existed at this time one truly prosperous industry. Lumber does not lay claim to that distinction. Many mills in the north, south and particularly in the west have been closed. Others are operating on short time, and many of them only for the purpose of keeping the crews together and giving the men enough work to enable them to live.

Lumber prices are lower now than they have been since 1908, and lumber from many sections is being sold at less than cost of production. So much for the price situation.

It is true manufacturers of lumber have built dry kilns, some of them having sufficient capacity to kiln-dry every foot of lumber that is made. Dry kilns are a necessary adjunct of the modern lumber manufacturing plant. Not only is the time of preparing lumber for the market shortened and the cost reduced, but the quality of the product is vastly improved.

The sap wood of beech, birch and maple, of Arkansas soft pine, yellow pine, red gum and other woods, blues or blackens very quickly if piled in the open, or under cover. By using a dry kiln the sap is killed, the tendency to "blue" is destroyed and the true value of the wood is preserved for the user. "White clear" maple flooring, for example, is all sap stock. Without the aid of modern science in the form of a dry kiln, much of the maple sap wood would be rendered almost valueless. That statement also holds true of red gum, southern pines and other woods.

A properly operated dry kiln removes the moisture without injuring the wood. An elaborate discussion of methods need not be given. In northern hardwoods the moisture content of the wood is reduced to an average of about 6 percent, and this removal brings about a very considerable shrinkage in width and thickness, for which allowance is made when the stock is cut.

After leaving the kiln the lumber absorbs moisture from the atmosphere, frequently taking on 4 to 6 percent additional. Even then it is dryer than the average atmosphere. Much of this kiln-dried stock is carried in shed three to twelve months before it is milled and shipped, but the behavior of stock a year old and that fresh from the dry kiln does not differ materially.

Arkansas soft pine for shelves, benches or partitions, edge grain stock for hospital floors, or the modern one-piece maple, beech or birch floor leaves the mill and usually arrives at the building in good condition. The air in new structures usually is almost saturated with moisture. A part of this is absorbed by the wood and causes it to expand. Later when the building dries the wood contracts and the joints in floor, partition and trim open. The best safeguard is to buy stock that has been properly manufactured and *see to it that the building is dry.*

The most notable example of unsatisfactory results comes from nailing casing or base to green walls. The wood takes on moisture and expands, causing the casing or base to curl or twist. Subsequently it will dry, or season, in that condition. Such twisting or curling is not properly chargeable to lumber, but to lack of intelligence in using it.

Only those woods which contain an excess of pitch will "bleed" before or after being painted. For shelves, benches or partitions, Arkansas soft pine, white pine, birch or some other non-resinous wood should be employed.

Lumbermen may not be the best salesmen in the world, but the more progressive are exercising every mite of skill and knowledge, and are using every possible means of preparing their products for the market in the way they should be prepared. The best advice that could be given is to keep in touch with the people who are doing things right. WESLEY T. CHRISTINE.

Harrison Law Hospital Form

To the Editor of THE MODERN HOSPITAL:

I notice in a great many hospital and nursing magazines many perplexed inquiries regarding the "Harrison Law;" how the hospitals shall prescribe, etc.

I believe that our hospital has a very simple and effective method of solving this problem. The commissioner has not restricted us to any one form, but gives a general idea, and requests that these records be kept for two years, subject to inspection.

UNIONTOWN HOSPITAL

NARCOTICS

Date.....

Name of Patient.....

Address.....

Kind and Quantity of Drug.....

.....

Name of Physician.....

.....

.....

Date.....

Name of Patient.....

Address.....

Kind and Quantity of Drug.....

.....

Name of Physician.....

.....

.....

We have had small books made, one for each ward, with space for the name of patient, date, address, drug and quantity given. This is filled in by the nurse, and the physician makes his rounds and adds his name or initials. This has eliminated all confusion and conforms strictly with the law. GRACE G. BRUMBAUGH,

Superintendent Uniontown (Pa.) Hospital.

Good Lumber Cheap—A Criticism

To the Editor of THE MODERN HOSPITAL:

My attention has been called to an item in your March number, entitled "Worthless Lumber on the Market," in which certain rather startling statements are made concerning the possibility of obtaining good lumber. While it is doubtless true that every now and then poorly manufactured and poorly dried lumber is offered to the consumer, I trust you will pardon me for saying that the information given by your journal to the inquiry is misleading in more than one sense, and in fact can hardly be substantiated.

I am somewhat at a loss to understand where the information as to prices originated, because my experience during the past months has been that at no time for many years back has high-grade lumber been obtainable at such a low figure as at the present time. The actual fact of the matter is that a large percentage of the mills are shut down, and instead of there being an overproduction, as indicated in your article, the "ready market" is rather difficult to find.

It is impossible for me in a brief reply of this character to go extensively into a discussion of the drying of lumber. Permit me to point out, however, that a modern dry kiln, instead of being a detriment to the lumber, is a distinct addition to the manufacturing process, because it enables the manufacturer to deliver the very article which your correspondent complains he cannot get. In other words, properly kiln-dried lumber is in every way as serviceable, in fact more so, than much of the lumber which was furnished in past years direct from the saw. The difficulty which your correspondent has probably experienced may have been due to improperly kiln-dried material, or to conditions in the building, for which the lumber could hardly be held responsible.

The chief point which I would like to suggest in connection with your article is that the failure to get a high-grade class of material may possibly have been due to the manner of purchase. There are thousands of reliable dealers of lumber in the United States making just as high-grade a product as was manufactured in the past. To my mind, the securing of a good product depends largely upon the kind of person from whom one buys the lumber. If your correspondent has had an unfortunate experience, I am sure there are many who will be glad to give him specific directions as to where he can find reliable people to deal with, who will give him suitable lumber, particularly if they are advised as to what the lumber is to be used for. I have no hesitation in saying that no one should have any difficulty in getting the very best wood, no matter whether it be hardwood or pine, at a cost fairly below anything given in the reply to your correspondent's inquiry. HERMANN VON SCHRENK,

Consulting Timber Engineer, St. Louis.

Specialists in Hospital Architecture

To the Editor of THE MODERN HOSPITAL:

In your April issue I note that Mr. Field, of Texas, is somewhat startled by comment I had made upon Dr. Bartine's article on "Building Hospitals."

I think that there is promise in a view of conditions as taken by Mr. Field, inasmuch as the truth is always startling, and it seems to have awakened some of the brother professionals to existing conditions.

However, Mr. Field takes advantage in a somewhat ironic manner of the fact that there are men who are big enough, and, if I may modestly say so, sacrificing enough, to limit their practice to one particular class of work. I do remember that I did not use the personal pronoun, but made a general statement that men who do limit their practice conscientiously and wholly to one class of buildings, are entitled to consideration. The facts are that there are as many "experts" as there are practicing architects, but can they honestly say they are as fully qualified with a diversified practice—a flat building today, stable or warehouse tomorrow, residence the next—to design a building to care for the sick, with all the fine essentials necessary in such a building, as the man who devotes his entire time and practice to such buildings?

If they are honest in their practice it is evident that even with some experience in this class of work they cannot be as well qualified as the expert. I wish we might all see the time, and soon, that the so-called professional view in other walks would follow the example of the physicians, to recognize that what is good for one is good for all, and that the sum total of respect gained by those who are building up must be to the credit of the profession as a whole. I have never heard of a physician descending to personalities when a brother physician wrote an article which did not agree with the belief of the first. The point I wished to make in my letter was for the establishment in fact of a code of ethics, a tolerant attitude to make harmony and prosperity, an upbuilding of what at any rate at one time was considered a learned profession. An architect's work should be his best advertisement; his standards of decency and honesty, his pride in his work, the results he attains; but never the cheap claptrap of vituperation.

If any architect will honestly specialize I will be the last one to criticise him and the first to uphold him and extend my hand to help. I think it hardly worthy of any man calling himself a professional to make a statement that I had wilfully advertised through the fact that I had read a paper on Architectural Ethics before a convention of architects. I merely made the assertion that in a paper which I had read a certain statement was made relative to competitions. If Mr. Field is very anxious to have statistics on the subject I would be very pleased to give him the facts concerning practically every competition of note in the last few years, and I think I can conclusively convince him that I was charitable when I said that 10 percent of such competitions were honestly conducted, and it was not through ignorance, as Mr. Field states, on the part of the boards, that the other 90 percent were unfair.

I am not condemning individuals or organizations so much as I am the reprehensible methods employed. I am thoroughly willing to be convinced if anyone has the exact data, that there are ten perfectly fair and honest competitions out of every hundred, and I consider an unfair competition just as much a dishonest one as when dishonestly conducted.

My comments on Dr. Bartine's paper were purely and solely for the purpose of expressing my appreciation of the views of a man held in the highest esteem in the hospital world. An honest expression of opinion, even if it differs from mine, is admissible and wholly acceptable as an opinion, but opinions of this character can be expressed without using personalities. I am perfectly willing at any time to "hitch my wagon to a star," as Emerson said, but I will see to it that it is a "clean hitch" and that my wagon is not mud-bespattered.

MEYER J. STURM.

HINTS FOR HOSPITAL SUPERINTENDENTS.

Too many superintendents have the notion that medical men who are active and persistent, and who want things, are nuisances. It is common knowledge that a hospital is, after all, just about the caliber of its medical men, so far as its medical work is concerned. If these men know what good practice is, they are remiss in their duty to their patients and to their hospital if they do not insist on having it. That hospital is best whose medical men are forever fighting for better things and for better ways of doing things; encourage them to keep pushing.

Woods Hutchinson says that about fifty years ago medical men began to think. When did we hospital people begin to think, and does each one of us now really think about his or her job? A good many of us complain that our boards do not give us enough authority; are we earning their confidence by our mental alertness and our physical activities? Leadership in the affairs of this twentieth century world comes by way of mental superiority, coupled with horse sense. Let us introspect occasionally, and size ourselves up. Are we leading our board or is it pushing us along?

Get your people into the habit of carrying out orders. When you have determined that a thing ought to be done, get hold of the right person and tell him or her what you want and how you want it; then if it isn't done right, and promptly, handle the matter in such a way that the next order you give will be obeyed. That doesn't mean there can be no argument about it; the best employees of an institution, and the best for you to have about you, are those who will take issue with you, respectfully, on the conduct of that part of the business that comes under them. You can't know it all, and even a mop user may occasionally have a thought that will be worth while.

It isn't walls that make a hospital—it is work. You may have a heap of junk in the shape of buildings and equipment; but if you keep things clean, give your doctors and patients a high order of service, and if there be a lively conscience pervading the atmosphere, you have a hospital. The finest, if the most pathetic, thing I ever saw was a woman superintendent and a group of pupil nurses running a splendid hospital in a junk pile. There was not one single decent thing in the whole place, and there was no money to buy anything—all the patients were poor beyond description; but the makeshifts those women performed were little short of miraculous—and again I thought, it isn't walls that make a hospital—it is work.

Don't buy food supplies for your hospital at the corner grocery; you will pay 50 percent more and get 50 percent poorer quality. Even if it is meat and you have no refrigerator, you can buy enough for a day or two and pay wholesale prices. For instance, if you buy a "chuck" you can get a number of dainty individual steaks, two or three good roasts, a pot roast or two, hamburger steak for the help and a great hunk of soup meat. If it is lettuce or celery, you can moisten it and keep it fresh for days—besides, both of those greens are fine for the nurses. Sweetbreads and squab will keep well for days on a cake of ice. Nearly every hospital, in this day of good transportation, is within reach of a wholesale market, and quantities can be purchased that will bring down the cost in case or crate lots that will far more than repay the trouble and thought necessary to success.

FOREIGN CORRESPONDENCE

Military Hospital Arrangements in Great Britain

Within a few days after the outbreak of hostilities between Great Britain and Germany arrangements had been made by which hospital accommodation would be provided in London and the provinces for whatever numbers of sick or wounded might reasonably be expected to need treatment. Throughout the country generally the organization laid down in the Territorial Forces Act was called into being with great rapidity. In London special arrangements were made: principally all the civil general hospitals in the metropolis placed beds at the service of the military authorities. The London Hospital immediately offered 500 beds; in the case of the others the accommodation offered varied from 50 to 150 beds.

According to the mobilization scheme 4 general hospitals are provided in the metropolis, 2 in the Eastern Command (at Cambridge and Brighton), 5 in the Northern Command (at Newcastle, Leeds, Sheffield, Lincoln and Leicester), 4 in Scotland (at Aberdeen and Edinburgh and two in Glasgow), 5 in the Southern Command (at Birmingham, Bristol, Oxford, Plymouth and Gosport), and 3 in the Western Command (at Liverpool, Manchester and Cardiff). Each of these 23 hospitals is organized for 500 beds, and has in peace time a staff of medical practitioners, officers of the Territorial Force (formerly known as Volunteers), whose services are available on mobilization. Within a very short time, to be reckoned in days, the whole system came into being; thus, on the 5th of August the Fourth Northern General Hospital was mobilized and took over the buildings of the Lincoln Grammar School; on the following day the necessary work for adapting the various structures to hospital requirements was commenced; 200 men were employed; 20 huts were speedily erected, each to contain 20 beds; electric light and water supply were laid on, and the necessary drains constructed. Similarly rapid organization, adaptation and construction took place throughout the country, the buildings used being either schools or training colleges, as at Portsmouth, Lincoln, Newcastle, Brighton, Sheffield, Manchester, Birmingham, Leeds and Cardiff, and in London; or hospitals and asylums available for this special purpose, as at Bristol, Leicester, Newcastle, Sheffield and in London.

We may first mention the general plan of arrangements for reception of invalids on arrival in England from the seat of war. Southhampton was chosen as the chief port of disembarkation for the sick and wounded from the hospital ships. At this port was stationed a surgeon general in control of the whole arrangements, who had at his disposal twelve ambulance trains of special construction, each for 100 lying-down cases, or for a much larger number sitting up. This officer was informed twice a week, from all the larger hospital institutions under military control throughout the country, of the number of beds available, and was thereby enabled to distribute the patients to all ports with the certainty of their being properly accommodated on arrival.

To take London as an example: there are four General Hospitals provided by the Territorial organization for London, as already mentioned: one of these is located in the new buildings of King's College Hospital, just now completed at Camberwell (Fig. 1). The other three are in

Fig. 1. King's College Hospital, or Fourth London General Hospital.

buildings constructed for educational purposes, more or less suitable for hospital requirements on an emergency. The Second London General Hospital was established in the buildings of St. Mark's Training College for Teachers, at Chelsea, and in a secondary school adjoining belonging to the London County Council. The rooms, on two stories of the Training College, vary considerably in size, but for the 260 patients accommodated a minimum of 1,000 cubic feet of air space has been provided, and in many wards 1,200 cubic feet. The medical and surgical sections consist of 260 beds each, the former being housed in the college and the latter in a secondary school adjoining. A section of party wall was taken down to provide direct communication. An operating theater was equipped, with sterilizer and all necessary fittings; sanitary annexes were constructed; complete appliances for disinfection of clothing, etc., were installed, and kitchens established in the basement, fitted up with modern gas cooking apparatus. This

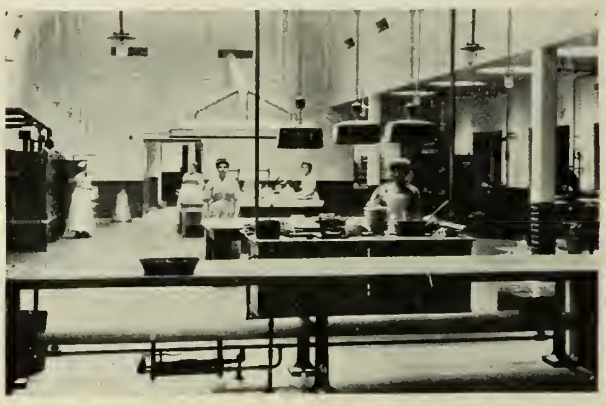


Fig. 2. King's College Hospital, or Fourth London General Hospital. The kitchen, improvised.

extensive work was carried out with great expedition, and the grounds of the building being immediately alongside of the Chelsea station of the West London Railway, the hospital is in direct communication with all parts of the country and patients can be brought in ambulance trains right up to its very doors.

A section of the Second London Hospital is located at St. Thomas's Hospital, on the Albert Embankment (opposite the Houses of Parliament), and this accommodates 200

patients. There is another section, for 40 patients, at the Great Northern Hospital, Holloway. The distance of this latter from the main hospital was found to make administration somewhat difficult; and it would seem that the effective working and control of a branch hospital so far away (some seven or eight miles) from its headquarters must be very difficult. A convalescent home in connection with the Second London Hospital was established at Richmond, for 40 patients, and has proved to be of great benefit.

Fig. 3. Third London General Hospital.

The Third London General Hospital was established at the Royal Victoria Patriotic Asylum, on Wandsworth Common. The building itself could only provide satisfactorily for 200 patients in the various class rooms, which are built around a central quadrangle; but the extensive grounds in which the school is situated afforded ample room for the erection of hut hospitals, ten of which were very speedily provided. They are arranged on either side of a covered way, and are constructed of iron, lined with asbestos felt and painted externally to render them impervious to wet.

Fig. 4. First London General Hospital.

Each hut contains 20 patients and has its own veranda. Sanitary offices were put up, and a new main drain laid to connect with the nearest sewer. There is ample kitchen accommodation in the main building, which is surrounded by a large garden, or small park, very agreeable for convalescent patients.

At Birmingham the First Southern Territorial General Hospital has been installed in the buildings of the University. This arrangement had been planned out in all details some years ago, and the mobilization was completed in the course of a few days. The number of beds actually ready at the end of a week was 520, but accommodation for 800 was provided very soon after. The most suitable rooms were occupied as wards, and were fully occupied within a week; an operating theater was immediately fitted up; the kitchen can provide meals for 2,000 persons; electric light is laid on throughout the whole premises, which have proved to be exceedingly well adapted to meet the emergency. Later on all the adjuncts of a fully established hospital where provided, including recreation rooms for patients, separate departments for out-patients, barracks for nursing orderlies, and Sisters' quarters. A large number of operations have been performed, with excellent results. In addition, section hospitals have been established, separately staffed and nursed, but under the same administration; in these some 600 or 700 patients are cared for. In this institution, therefore, about 1,500 fully equipped beds have been provided, perhaps the most extensive temporary hospital accommodation that has been furnished anywhere or on any occasion.

An entirely new departure in hospital practice has been made in the city of London by the conversion of the fine hall of the Worshipful Company of Fishmongers into a hospital for officers. This well-known building stands just north of London Bridge, and would not generally be considered particularly well adapted for hospital purposes; but it has been so arranged and equipped as to be entirely

Fig. 5. Part of the First London General Hospital. The two buildings adjoin.

suitable and comfortable. The first floor only is occupied by patients; the lofty Great Hall, subdivided by partitions, forms five cubicles, each containing two beds; these cubicles occupy only a portion of the floor space, the middle of which is left free for exercise, etc. A smaller room, divided into two cubicles, overlooks the river. Small single-bedded rooms are available for the most serious cases. The equipment for each cubicle is almost luxurious, including electric radiators for heating, electric light, armchairs and reading tables for each bed. There is an operating theater, with a room for administering anesthetics, and a roentgen-ray room.

Another hospital for officers has been opened in a large house overlooking the gardens of Kensington Palace, in a retired situation. Here accommodation has been provided for 35 patients, nearly all having separate rooms; this hospital is designed especially for the use of officers suffering from shock, and special arrangements to secure the utmost restfulness and tranquillity have been made, nearly every patient having a room to himself. Some of the large reception rooms have been divided by partitions into four, so as to insure privacy and quiet, much more than would be obtainable in a public institution under ordinary conditions. The War Office is also arranging for a similar institution for cases of a nature needing absolute rest.

The First London Territorial Hospital is another ex-

ample of the buildings of a training college being adapted to hospital purposes. This hospital, in the south of London, is established at St. Gabriel's Training College for Teachers and in the Council School adjoining. There are 12 wards of 15 beds each in the college and accommodation for 300 more patients in the school. No great alteration in fittings was required to make the adaptation of these buildings suitable for hospital wards, but considerable additions had to be made in the way of sanitary annexes, etc. An art studio on the topmost floor was found to make an excellently well lighted operating theater; but one, we should think, likely to become too cold, and difficult to heat adequately, an important point in an operating room. The various necessary quarters for attendants have been provided in temporary buildings in the playground, where also a kitchen has been built, as well as disinfector and sterilizer. In addition to the 518 beds at Camberwell, a section of 198 beds is established at St. Bartholomew's Hospital, in the city, for use if required.

The Second Eastern General Hospital was mobilized at Brighton in the grammar school on August 7; on August 13 the buildings were in a suitable condition to receive 150 or even 200 patients; eventually 520 beds were provided, a council school in the neighborhood being also taken over. An operating theater, with all needful appliances, was established in the laundry building; an x-ray room was fitted up, and the necessary equipment provided for dental, throat, eye and ear cases.

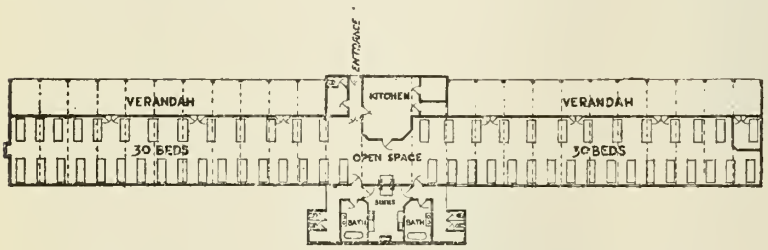


Fig. 6. The ground plan of the new (temporary) soldiers' ward.

Special reference must properly be made to a novelty in hospital construction (as far as the British Isles are concerned), viz., an open-air hospital for 1,220 beds, forming the First Eastern Territorial Hospital at Cambridge. There are 10 blocks, each for 120 patients; a corridor unites the blocks, passing through their center, so that on each side there are ten wards, each containing 60 beds. The buildings are of one story, the walls constructed of a kind of asbestos, called poilite, a quarter of an inch thick. These walls are on one side only of the ward, and the ward axis runs east and west, so that there is an exposure to the south, on which side is a screen of Willesden canvas (like the sunblind of a shop front), which can be let down as required; in bad weather these screens can be let down vertically to the ground. At the top of the back wall is a nine-inch opening all along, between the wall and the roof, which is of corrugated iron. Each patient has three blankets, and a fourth is provided, if necessary. A kitchen, recreation room, operating theater, pack store, etc., are provided. The whole cost came to £17 per bed. The planning of this hospital was the work of Colonel Joseph Griffiths, F. R. C. S., who is in command.

At Hinckley, in Leicestershire, an isolation hospital for infectious cases has recently been erected, so arranged as to give the whole of the patients an absolutely open-air system of treatment in verandas; this has been placed at the disposal of the military authorities for the accommodation of enteric patients. The design is due to Wm. J. S. Walker, an architect, working in conjunction with the County Medical Officer of Health, Dr. T. Robinson: the cost was £9,000. A hut hospital for 150 acute fever cases has also been provided, with 150 beds, in Addington Park.

We are able to illustrate the method of dealing with a sudden large influx of cases by the erection of an emergency block, as has been done at the Norwich Hospital. The wounded were at first accommodated in tents, but a permanent emergency ward according to the accompanying plan was opened in February. The building is 222 feet long, and faces the south; in the center is the kitchen, with store room, bath room, etc., and on either side is a ward of 30 beds. The sanitary block is in rear of the center, connected by open-air lobbies. There is a spacious veranda on the south side, and open-air treatment is extensively adopted. The walls are of wood, lined with asbestos; the heating is by hot-air stoves, and the lighting by electricity; special attention has been paid to ventilation by hopper-opening windows on the north side, and by pivot-hung windows on the south side, over the veranda. The total cost is stated to have been £1,500 (Figs. 6 and 7).

The organization of the British Red Cross Society has been exceedingly active and useful in supplementing the official action of the military authorities of the Allied Forces. The scope of the Society's efforts has, moreover, continually extended, and now includes pretty well all the branches of hospital administration. There is, first, the strictly ambulance department, viz., the provision of ambulance wagons for transport of wounded, and the men needed to work them; this part of the Society's operations has been in full work throughout the campaign, under the supervision of the Medical Corps of the British Army. Then, too, the Society maintains hospitals, as auxiliary to those of the military authorities. Thus, in the neighborhood of Paris, at the Chateau Laversine, near Chantilly, belonging to Baron Robert de Rothschild, there is a 200-bed hospital, equipped by the Baron, but maintained by the Society. Near Compiegne a generous American lady has placed her house, the Chateau d' Annell, at the disposal of the Red Cross; at Rouen a hospital is maintained for officers. In Paris itself the Society is responsible for 500 beds in four institutions, the largest of these being the Astoria Hospital with 180 beds, capable of increase to 300. As time has gone on the Red Cross staff has moved westward towards the coast. The largest Red Cross hospital is that known as the King George Hospital, in London, near Waterloo Station, established in conjunction with the Order of St. John of Jerusalem. The buildings, nearly completed, of H. M. Stationery Office were taken over, and adapted as a hospital for 1,650 beds.

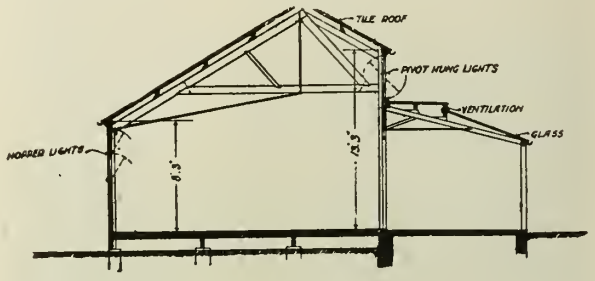


Fig. 7. The ward in section.

A Retired Army Surgeon.

NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO W WALLERICH, Associate Editor.

Improved Ether Vapor Inhaler

Designed by Dr. F. W. Pinneo.

The apparatus illustrated below was described a few years ago in the Journal of the A. M. A. by Dr. Pinneo. It is a modification of the chloroform and ether inhaler used for many years by Dr. Trumann Brophy in his cleft palate work.

Dr. Pinneo, however, added a metallic tank for the purpose of keeping both the bottle filled with ether and the reservoir vapor bottle immersed in hot water, in order to warm the ether vapor. The water, however, would very soon cool off, and, regardless of the fact that warm water was added from time to time, it was impossible to maintain an even temperature.

Dr. F. W. Pinneo's improved ether inhaler.

This defect has lately been overcome by adding a second tank in the bottom of which is inserted an electric bulb of suitable candlepower. The tank, with the bottles immersed in water, is set into the lower tank and the heat produced by the lamp is sufficient to keep the water, and consequently the ether and ether vapor, at a uniform temperature for any length of time desired.

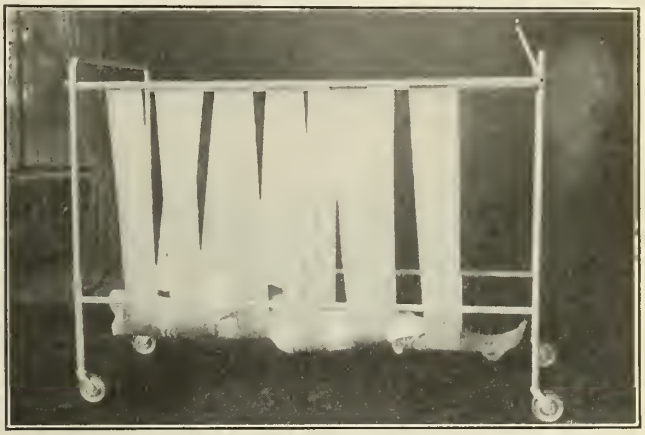
With the apparatus is shown only the mouthpiece, such as is used in tonsil and adenoid or cleft palate operations. An ether mask can, however, be substituted, or a pair of nasal catheters, for intra-tracheal anesthesia in thoracic work, according to the method of Drs. Meltzer and Auer. A foot bellows may be substituted in place of the hand bellows shown in the illustration.

An Apparatus for Lifting Patients

Appliances for handling patients with the least possible amount of pain to the patient are always of interest to the hospital superintendent.

The invalid lifter here illustrated has many points which seem to commend it. The device consists of a strongly built frame mounted on casters, and having at each end a shaft which carries a set of bevel gears. These bevel gears in turn operate the two cross bars, which run from one end of the frame to the other. The cross bars are perforated, so that belts having metal clips, which fit into the holes, can be attached. By an arrangement of clutches the bars can be operated together or singly by means of a crank.

The belts or strips are placed under the patient, the invalid lifter moved over the patient's bed and the belts



Floyd invalid lifter.

attached to the frame. By turning the crank the patient can be lifted bodily from the bed, turned to the right or left, placed in a sitting position, or in the bath. In fact, it is possible to handle the patient in the same manner as if in the hands of several persons, but the handling can be done with the greatest ease by the nurse. It would seem that this device should be of immense value in handling severe fracture cases, burns, very heavy patients, etc. It can easily be folded up, therefore does not require much space when not in service, and has the advantage that it practically makes an adjustable invalid bed out of the regulation hospital bed.

Equipment of Accouchment Room for the Management of Labor Cases by the Twilight Sleep Method at the Mary Thompson Hospital, Chicago

A great deal has been written, pro and con, in the medical press and the magazines about the so-called method of painless child-birth, and obstetricians in this country who have given this method a trial have all pointed out the fact that suitable equipment to take proper care of the patients during the progress of labor is of the utmost importance.

At the Mary Thompson Hospital for Women and Children in Chicago, which has a record of over two hundred cases conducted by the twilight sleep method, the delivery bed and accessories depicted in the accompanying illustrations having given entire satisfaction.

The bed is a regulation sectional delivery bed, of a type which has been in use at many hospitals for years. The width is 30 inches, and the inside length 72 inches, with strong steel band bottom, set at 30 inches from the floor. The bed can be divided in two parts (Fig. 1). The head

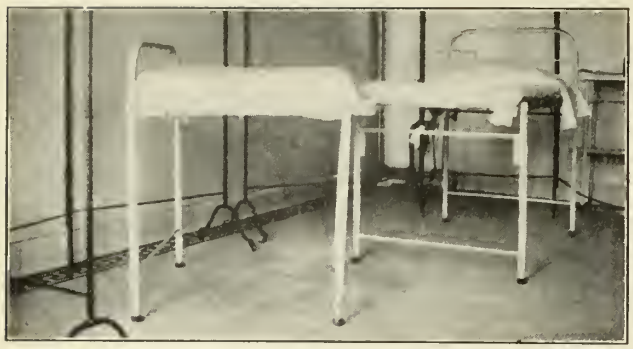


Fig. 1. Sectional delivery bed.

and foot sections are jointed and fastened together with hooks on the upper crossrods of center legs. The bed is so shown in Fig. 2.

At the suggestion of the attending gynecologist, Dr. Bertha Van Hoosen, a set of two iron folding screens were constructed, which completely surround the bed when in position (Fig. 2). A canvas sheet, large enough to cover the bed and reaching to the top of the screen frame, is

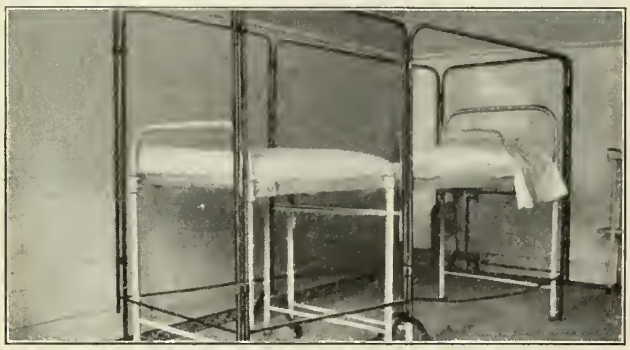


Fig. 2. Van Hoosen folding screen frame in position without covers.

placed under the mattress, and when the overhanging sides are adjusted and fastened to the rail of the screen a complete crib is formed with the sides 2½ feet high (Fig. 3).

Since these illustrations were made, a second cross bar has been added to the screens, about 6 inches from the top, and to this rail the canvas sheet is fastened; this enables

Fig. 3. Canvas covers in position on screen forming crib.

the attendant to look over the top of the crib and observe the patient. With this arrangement there is no danger that patients who toss themselves about may fall out of the bed and injure themselves. When the patient is ready for delivery, the screen is removed, the foot section disjointed and pushed out of the way, a comfortable pair of specially designed Bierhoff's leg crutches are inserted in the anterior posts of the head section and the patient placed in position for delivery.

This comparatively inexpensive equipment will be exhibited by the Mary Thompson Hospital at the Non-commercial Exhibit during the coming meeting of the American Hospital Association in San Francisco.

Tissue Crushing Apparatus as Suggested by Dr. E. C. Rosenow, Chicago

As indicated in the papers which have been read by Dr. Rosenow, of the Memorial Institute of Infectious Diseases, on the subject of bacteriology of infections, much dependence has been placed upon the study of the fluids; but in many cases the culture is sterile, and demonstrations of bacteria in the tissues frequently fail.

Dr. Rosenow has had an apparatus designed especially for making cultures from excised tissues. The technic employed has been reported upon in the various scientific journals, but it may be of interest to our bacteriologists to have some further information as to the mechanical devices which Dr. Rosenow uses. These consist of two pieces of apparatus; one a sterile chamber and the other the tissue crusher. The sterile chamber, as illustrated by

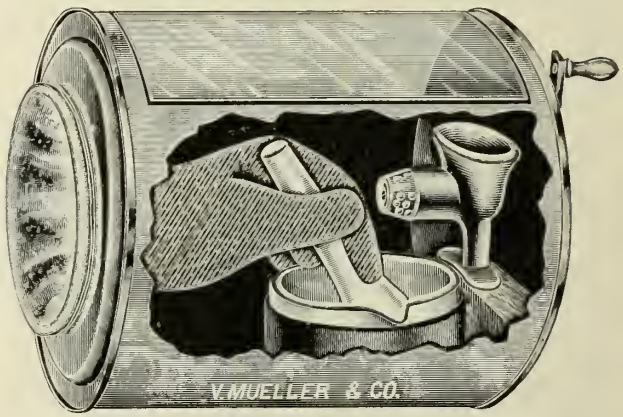


Fig. 1. Sterile air chamber. The right hand is used inside the apparatus.

Fig. 1, consists of a copper container 19 x 23 cm., containing a large hole 10 cm. in diameter at one end. This hole has a flanged rim to which is tied a long-sleeved canvas glove. There is a smaller opening in the side of the chamber, through which culture tubes may be placed in taking specimens from the chamber. At the top is a window or opening, 8 x 12 cm., covered with mica. At the end of the chamber is mounted an emulsifier with its handle projecting so that it may be operated from the outside. Just under the emulsifier is placed a holder or support for holding a mortar and pestle. Either apparatus can, of course, be sterilized by dry heat, but Dr. Rosenow recommends 160° C. for one hour. The material is placed in emulsifier and ground, the ground portions falling into the emulsifier. After grinding the tissue in the mortar for a time, sterile quartz-sand and the emulsifying fluid are poured in through the side opening of the chamber. It will thus be seen that material can be thoroughly ground, without the possibility of contamination. The tissue crusher offers a very powerful device for grinding the larger and firmer tissues, such as the thyroid gland, cystic ovaries and the glands in Hodgkin's disease.

The tissue crusher consists of two close-fitting threaded metal tubes, the outer tube fitted with an air-tight removable bottom, the inner surface of which is rough, and a

four-sided rim. The inner tube is fitted with a removable disc containing several hundred very small drilled holes and a handle which serves as a wrench. The inner tube is plugged with cotton and placed inside the other and the instrument sterilized in hot air. In order to prevent leakage

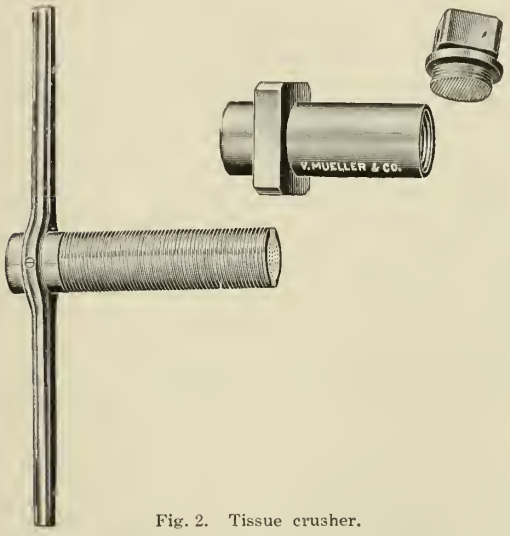


Fig. 2. Tissue crusher.

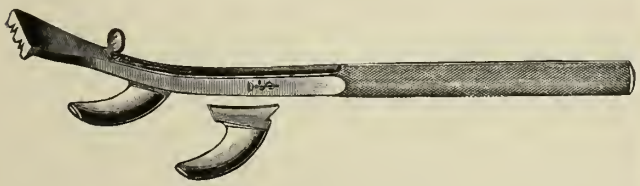
the thread of the inner tube should be covered with hot sterile paraffin or petroleum oil just before using. The tissue is placed in the outer tube and the inner tube turned in the outer, using the necessary force until the tissue is crushed and expressed into the inner tube. The instrument is then held slantwise, the cotton plug flamed and removed, the emulsifying fluid added and the emulsion transferred to a sterile test-tube with a sterile pipet.

A Simple Instrument for Removing Plaster of Paris Casts

BY DR. HASSELMANN

To surgeons, without exception, the removal of plaster casts is and has always been one of the most disagreeable tasks and they are, as a rule, looking for some one to "assist" them, when it comes to this part of the work.

To facilitate this procedure, many instruments and devices have been invented, but those that are efficient are



The Unitas Plaster Cutter.

generally rather expensive, and others are so complicated that it is impossible to keep them in good working order for any length of time, or to make repairs promptly in case of breakage.

The instrument consists of a lever which is considerably broadened at the distal end and provided with teeth. The blade is detachable and is fastened in a narrow groove near the end, by means of a thumb-screw. The blade is rounded and so shaped that there is little danger of injuring the patient. This plaster cutter can be manipulated with one hand, and every variety of bandage, including plaster of paris, starch and other materials, may be readily cut without great exertion.

Inasmuch as curved or angular cuts may be made with the instrument it is especially well adapted to prepare casts used in the treatment of curvature of the spine according to the method of Dr. Abbott. The weight of the instrument is only eight ounces and it is offered in the instrument stores under the name of the Unitas Plaster Cutter.

Pneumatic Liquid Soap Dispenser

A new departure in a liquid soap dispenser has recently been put on the market.

The apparatus consists of a non-rusting floor pump to which is connected a flexible metal tube, leading to a receptacle attached by means of a bracket to the wall.

By pressure on the foot pump, a given amount of air is sent into the receptacle, forcing out the liquid soap through the goose-neck tube.

The pump is so constructed that the instant the foot is removed a semi-vacuum is created in the receptacle through the tubing connecting the receptacle with the pump, thus eliminating the possibility of getting any drip

Pneumatic liquid soap dispenser.

from the supply tube. The fact that this apparatus is pneumatic, rather than mechanical, insures its working at all times. The novel feature incorporated in the foot pump, which permits only a given amount of soap to be dispensed at one pressure of the foot and the preventing of any drip after the foot is released from the floor pump insures a hospital against any waste of the green soap and a clean, sanitary apparatus which requires no special attention. The floor pump can be made a permanent fixture at the surgeon's lavatory or it may be left unattached so as to be portable. The receptacle containing the green soap is of 32-oz. capacity and the bracket can be attached to any wall.

QUERIES AND ANSWERS

A Poor County Hospital

To the Editor of THE MODERN HOSPITAL:

Inclosed you will please find my check for $3.00 (three dollars) in payment for THE MODERN HOSPITAL. It is too bad that the contents of the magazine cannot be brought to the notice of the general public. Hospital work, especially county affairs, are given but little attention either by the public or boards of directors. The management here comes under the direction of the board of county commissioners, who never visit the institution, and all they think about is to curtail expenses after listening to some calamity howler. At the same time they want the place used as a general hospital. They allow outside doctors to bring in their private cases, which makes a great deal more work and expense; and at the same time they want a man to act as superintendent, janitor, laundryman and milkmaid, raise a garden and keep everything according to first-class standards. When I complain of not having sufficient help, they say to "work the old men in." I have about fifteen patients. While there are many younger, the best man I have is over eighty years old and has one bad leg and cannot be on his feet but a short time. I can't see any way out of it but to throw up the job and quit. I have changed the place from one of the most filthy on earth to a hospital that has the name of being the most sanitary and best kept of any in the state.

SUPERINTENDENT OF A COUNTY HOSPITAL.

Your experience in the conduct of a county hospital is a very common one in this country, especially in rural communities where the board of trustees or the county commissioners get all their information from outside sources and take no personal interest in the institution and would not know enough about its affairs to help, even if they were inclined to do so.

I think if I were in your place I would get hold of the commissioners, one at a time, and have a straight talk with them about your problems, and if they tell you that the community kicks about the expense ask them for permission to go directly to the community itself. If they give you that permission, get hold of your town or county newspaper, have a good straight talk with the editor, tell him what you are trying to do and the difficulties that you are meeting; ask him to let you prepare some short articles about your hospital, its plans and purposes, the good that it can do for the community if it were permitted to do so; tell the people of the value of such a public health center as your hospital could be made, write to them about the preventive medicine side and how much you could do to prevent disease; tell them how much you could do to help the medical men of the community to obtain broader experience in surgery and in the practice of medicine if the hospital were properly equipped and better financed, and impress them with the greater value to the community of these medical men if they were permitted to broaden out and obtain larger experience.

I think if you go about it in this sort of way that you can educate your community up to your point of view and if you have the community well in hand, the commissioners can be forced to give you what you want. If we can help you in bringing about different conditions there, we shall be glad of the opportunity. If you would like us to write to the president of your board of commissioners, I think we could write him such a letter as would instill some enthusiasm into him and give him a little different viewpoint about your hospital.

But first tell us more than we now know about the institution itself; what are you supposed to do? take care of the incurable of the community by way of an almshouse? or is your hospital a real county hospital for the care of all acute diseases as well as chronic? Tell us how much work you do and the kind of work, and what you have got to do it with; send us a photograph or two of your hospital and tell us how much of a farm you have and what you are doing with it; tell us something about the class of cases you have, the number of surgical operations, the equipment of your surgical department; tell us about your dispensary, if you have one, and any out-patient service that you may have, or whether you do any out-patient work; tell us how your nursing is conducted, whether you have a training school—and then let us write to the chairman of your board of commissioners.

How to Prevent Fly Eggs From Hatching

To the Editor of THE MODERN HOSPITAL:

What is the best way of getting rid of flies? We have used fly paper, traps, and nearly every other method that has been recommended. I recall having read something about a chemical product which will prevent fly eggs from hatching, but do not recall the details. Can you give me information on this subject? A SUBSCRIBER.

There is probably no other agency in the world that has the capacity to spread disease like the ordinary house fly. Because it is more or less a domestic insect and lives about the habitations of men, its opportunities to get into infected matter are greater than those of any other insect; and because it can move from place to place more rapidly, and because it thrives in greater numbers than any other insect, and because its hairy feet with sucker-like terminals can gather more certainly whatever infected matter it lights upon, the dangers from its presence are far greater than from any other infecting agent. "Swatting the fly" has come to be almost a national pastime, and undoubtedly does away with many of the pests. Fly poisons do away with many more, and sticky papers catch many thousands. But it has been estimated by the Department of Entomology of the United States government that one female fly, hatching in April, will multiply itself into thirteen figures—so many times that the human mind is unable to calculate the number. So that if we are to get rid of this extremely dangerous pest it would seem that other means must be evolved. Professor Leland O. Howard, chief of the United States Bureau of Entomology, has recently written a book on "The House Fly—A Disease Carrier," in which he suggests that by far the best method of fighting the house fly is to destroy its eggs before they hatch; and in the course of Dr. Howard's work he and others in the Bureau found that borax is the best agent to prevent the hatching of fly eggs. Dr. Howard's book recommends that powdered borax be sprinkled over manure piles and in cracks and crevices and wherever flies can breed.

The U. S. Department of Agriculture in Bulletin No. 118 gives the following directions for applying borax as a fly egg destroyer: "Apply through a fine sieve or flour sifter two ounces of borax to a can of garbage daily; apply ten ounces in the same way to eight bushels of fresh manure and sprinkle with water." Borax should be applied also to floors and crevices in barns, stables, markets, to street sweepings, and to such places in the hospital or

home as are likely to be chosen by flies in which to lay their eggs. After sprinkling the borax water should be sprinkled over the powder.

To Equip a Twelve-Bed Hospital

To the Editor of THE MODERN HOSPITAL:

We would like to have data concerning the cost of equipping an institution of twelve rooms; that is, twelve private rooms for patients, in addition to rooms for the superintendent, nurses, cook, maids and janitor; or, in all, about an eighteen-room building.

The patients' rooms would be equipped with all modern conveniences, but in this estimate it is not necessary to include an operating room and equipment.

You no doubt have data at your command from which you can readily obtain the information we desire.

We would also like to have the same data in respect to an institution of six private patients' rooms.

A TRUSTEE.

Your letter gives one a rather wide leeway as to the character of furnishings that you expect to put into your twelve-bed hospital and your six-bed hospital, but I will try to help you furnish your institution.

First, let us furnish the living quarters of (1) the superintendent; (2) nurses; (3) cooks, maids and janitor. You will have to give your superintendent pretty good quarters to live in, and I should say that the furnishings for them should cost you approximately $150; that means bed, dresser, rugs, chairs, tables and such knick-knacks as curtain material, dresser and table covers, etc.

I suppose in a hospital of that size you would want five nurses, all told, and you could safely count that the furnishing of their quarters would cost you $200.

Another $50 would be an economical amount to buy very modest furniture for the cook, a couple of maids and a janitor.

You should have an office, and you will hardly get off with less than a couple of hundred dollars, including desk, cabinet for some books and file for letters and records and the odds and ends that go to make up office furnishings.

None of the furnishings so far are special in character and we needn't itemize them, nor have we taken into account a reception room, which might cost you a hundred dollars.

The furnishing of the twelve rooms for private patients is another matter, and perhaps you would rather I gave you the details. There are certain furnishings that we can lump as the property of the single patient and we can then multiply the amount by twelve, which will give us the cost of furnishing twelve rooms; and then there are certain other things that must be bought for the whole house and are used in common. The appended lists ought to help you a good deal, both in the equipment of your twelve-bed and your six-bed hospital. None of these things contemplate kitchen and dining room furniture and equipment of a sterilizing plant. You should be able to equip a fairly good kitchen for this house for about $300, and I will not attempt to detail this unit unless you wish me to do so. A sterilizing plant for this hospital can be bought complete for about $300, and would include water sterilizers, hot and cold, six gallons each; a dressing sterilizer, 24 inches long, 16 inches inside diameter; a utensil sterilizer 16 inches square inside, and one instrument sterilizer 12 inches long, 8 inches wide and 6 inches high. The plumbing connections for these would be extra and the amount would depend on whether the work was done by your own people or you had to have a plumber come in and do it, and whether you had high pressure steam in your basement or whether the sterilizers were to be heated by their own boilers and with gas or electricity. If the latter, the first cost would be more than $300, and, perhaps, would reach $400, and I should advise gas, because electricity is not well established as a heater for this work as yet.

PATIENT'S ROOMS—EACH

Bed	$ 8.00
Springs	2.00
Mattress	10.00
2 Pillows	6.00
1 Rocker	7.00
2 Chairs	3.00
2 Rugs	12.00
1 Bedside Table	6.00
Curtains, 2 pairs	3.00
Shades	1.50
Dresser	30.00
Hassock	2.00
Nurse Couch (couch, mattress, pillows)	10.00
	$100.50

SUPPLIES—ONE PATIENT

6 Sheets	$ 4.00
12 Pillow Cases	6.00
6 Draw Sheets	3.00
2 pair Blankets	10.00
4 Spreads	4.00
	$ 27.00
Total for 12 patients	324.00

SUPPLIES IN COMMON

Bed pans, 1 dozen	$ 30.00
Urinals, 1 dozen	9.00
Hot water bottles, 1 dozen	15.00
Ice caps, ¼ dozen	3.00
Rubber sheeting, 45 inches wide, 50 yards	75.00
Rubber tubing, 1 pound	1.50
Catheters, male, 1 dozen	3.00
Hypodermic syringes, 1 dozen	6.00
Thermometers (mouth), 1 dozen	9.00
Thermometers (rectal), 1 dozen	9.00
Gauze, 1,000 yards, at 2¼ cents	22.50
Cotton, absorbent, 100 pounds, at 15 cents	15.00
Miscellaneous	10.00
	$212.00

Pay Patients and Small Fees

To the Editor of THE MODERN HOSPITAL:

I, as secretary of a committee appointed by the B. P. O. Elks Lodge No. 85, take the liberty to address you in regard to some information we are desirous to obtain in regard to hospital matters. Realizing that you no doubt would be more likely to possess the knowledge we are desirous to obtain than most anyone else we could think of, we hope we are not impertinent in asking the following questions:

Do you know of a hospital that is conducted on a semi-charity basis? What I mean by that is, patients are to be charged according to their ability to pay. Say a patient comes to a hospital who cannot pay the regular price, but will pay what he can, and yet does not want to feel that he is a pauper. Perhaps I have not made myself clear, but I hope you get the idea. If you know of such a place or places we would take it as a special favor if you would kindly give us name and address of same.

Thanking you in advance for any trouble this may be to you, I beg to remain, A. N. MINEAR, M. D.,
Salt Lake City, Utah.

Nearly all the hospitals in this country, excepting the state hospitals and some of the municipal hospitals, take pay patients, and in very many of them the administrators attempt to "temper the wind to the shorn lamb." In other words, they have private rooms at all prices from $100 a week down to $15, and most of them have ward prices ranging from $15, in a ward with two or three beds, down to $8 or $10 in the larger wards; and in most of these hospitals there are arrangements by which those who cannot pay even the minimum price for a ward bed are permitted to pay what they can: for instance, the Presbyterian Hospital in Chicago allows patients in the large

wards to pay as low as $2 or $3 if they cannot pay more. In the Michael Reese Hospital, a Jewish institution of 500 beds, the Board of Trustees take the position that if a patient is too poor to pay the minimum price of $8 per week in the large ward, he needs his money worse than the hospital does, and he is, therefore, not allowed to pay at all; once in a while there will be a patient whose pride will not allow him to accept the gratuity, and in that case he is permitted to pay what he feels he can afford, and the hospital has taken as low as a dollar or two; not because of the money, but to preserve the patient's self-respect.

There is a good deal of misinformation, I think, about what it costs to keep a ward patient in a hospital. We are accustomed to figure on the flat per capita cost of maintaining patients; that cost ranges from a dollar up to $4 or $5 in different hospitals, and boards of trustees and administrators are accustomed to figure that they cannot afford to accept a paying patient at a lower price than the actual fixed per capita cost. That isn't quite a true statement; there are certain fixed charges in a hospital which we call "overhead," and whether we have one or 500 patients in the institution, this overhead must be met; just as a ship with accommodations for 1,000 passengers, for instance, would have certain fixed charges in making the ocean trip, and if there were only 100 passengers the per capita cost would be huge, and would have to be met in some way—the cost in manning the ship, for coal, etc.; but after we got our thousand passengers aboard it would cost us very little to carry more passengers, the cost being merely for raw food and the very small service that would be rendered them, and it would really transpire that if the ship were crowded the passengers would get less service in proportion as the number to be served increased. The same state of things exists in the hospital. We do not go out and hire more people just because we have one or two or five extra patients. We either work a little harder or give them less service. So that the increased cost for taking extra patients means the actual cost of the raw food they will consume and the dressings and hospital supplies that they will use. These items can be met for 75 cents or at most $1 per day, and everything that the patient pays in addition to that would go toward helping to bring down the per capita cost of the hospital as a whole. This will give you something to figure on.

You can write to almost any of the hospitals in any of the cities and get individual experiences: St. Luke's or the Jewish Hospital at St. Louis; the University Hospital, the Swedish Hospital or St. Luke's Hospital at Minneapolis; the Presbyterian, or St. Luke's, or Michael Reese, or Wesley, or Mercy at Chicago. Another hospital that would give you a little different line of experience would be the St. Paul City and County Hospital at St. Paul, Minn. That is one of the very few municipal hospitals where they take pay patients. Another of the same sort is the Boston City Hospital. The New York Hospital, with its very large endowment, would be a good hospital to have the experience of, and you might write to Dr. Thomas Howell, the superintendent, and ask him what they do. The Presbyterian Hospital, of New York, Dr. Charles H. Young, superintendent, is another hospital that you might like to hear from. The per capita cost at the Presbyterian is nearly $7 for private patients and about $3 taking the house as a whole, but I think they take patients free and for any amount above that that they can afford to pay.

There is coming to be a great demand among the hospitals for treatment of patients that will not "pauperize" them, and I think that demand is impelling hospitals to accept what patients can afford to pay, where they can afford to pay only a very small amount.

THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

A NEW GAS MIXER

A Device Which Prevents the Formation of Carbon Monoxide Gas and Sooty Deposits, and Which by Producing Perfect Combustion Makes a Saving in the Consumption of Gas

Ever since the first introduction of gas cooking stoves, practically the same style of mixer has been employed to mingle together the proportions of gas and air necessary to produce a perfect blue flame. This, until now, has always been accomplished by permanently adjusting the air openings of the mixer to suit the maximum amount of gas capable of passing through the small opening at the end of the gas pipe, the flow of gas drawing the air in with it; the mixer is then fastened rigidly by a set-screw, and a perfect blue flame is obtained just so long as the pressure of the gas is the same as when the mixer was set, and also just so long as the gas valve is kept at the same position as when the air openings of the mixer were set. When less gas is passed through the gas pipe by turning off the valve, or by a reduction in the pressure, the opening admitting the air remains the same, and, consequently, there is not the proper ratio of air to gas necessary to give the maximum heat; and this ratio can only be obtained by taking a screw driver and loosening the set screw so as to reduce the air opening, and then tightening up the set-screw again. Such a procedure being manifestly impracticable, all gas stove users have become resigned to the fact that their stoves only give maximum heat service under a certain gas pressure with the valve at a certain degree of opening. No notice has been taken of it because there was no remedy, and in fact 95 percent of the users of gas stoves are quite unaware of the disadvantages under which they use their stoves.

Smarting of the eyes, due to carbon monoxide gas, has been an unfortunate necessity of working over a gas stove, and most people have found it advisable when several burners were going to keep the window open even if the stove had a flue attachment, owing to the fumes produced.

Up till the advent of the Hale gas mixer, a short time ago, the foregoing conditions were an unfortunate necessity; but now, thanks to this exceedingly simple device, perfect combustion at all stages of opening of the gas valve and under any variation of pressure of the gas in the mains can be obtained without any effort whatever on the part of the person operating the gas stove.

In other words, the Hale gas mixer has eliminated the human equation plus the screw driver, which until now has been the combination necessary to regulate the present-day standard mixer so as to obtain perfect combustion

in the gas stove or range under the varying conditions present in the use of gas for heating or cooking.

The new mixer accomplishes its purpose in a very simple manner.

Fig. 1 is a sectional view of the device, showing the needle-point valve through which the gas passes.

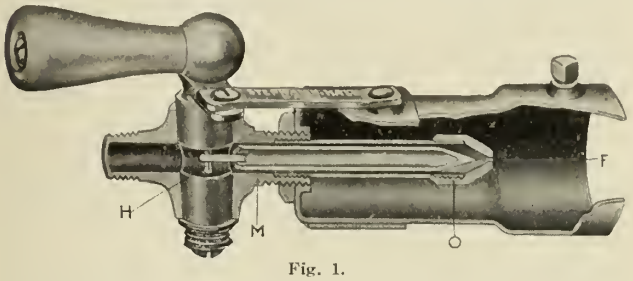


Fig. 1.

Fig. 2 shows the mixer complete, ready to apply. On the top is the lever A, which automatically moves backward and forward the sleeve D, which opens and closes the four air spaces B, as the handle C is turned to heighten or lower the flame.

The construction of the valve is such that the full

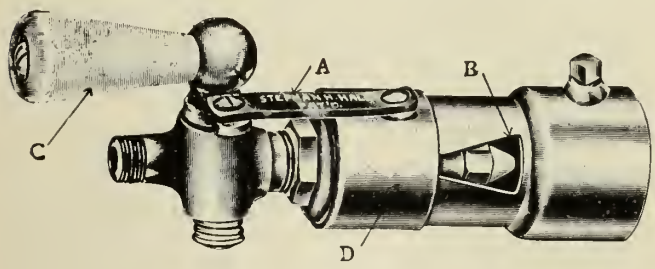


Fig. 2.

pressure of the gas is maintained up to the needle point, so that the highest possible injector-effect is furnished to draw in the air. The needle point is so constructed that it gives a gradually increasing flow of gas at a constant velocity, while the air openings, having been set to give the correct quantity of air, simultaneously decrease or in-

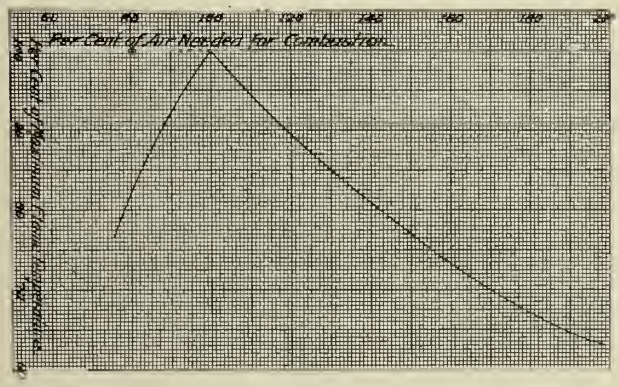


Fig. 3. Temperature curve.

crease the amount of air furnished in exact ratio to the increase or decrease in the flow of gas, by the opening or closing of the air openings, simultaneously accomplished by the sleeve sliding over them when moved by the lever attached to the handle.

It is, therefore, impossible not to have the correct mixture of air and gas to produce perfect combustion, whether the flame be at its maximum or minimum height or at any stage between these two extremes.

The average gas burner is either over-ventilated or under-ventilated. When over-ventilated, the secondary air flows between the bottom of the cooking vessel and the flame in such a manner as to reduce the flame temperature. When under-ventilated, there occurs incomplete combustion, which causes the flame to lengthen and the flame temperature to decrease, and at the same time produces carbon monoxide gas and deposits of soot.

Fig. 3 shows the curve of percentage of loss in the flame temperature from over- and under-ventilation.

Because of the double shut-off, at the needle valve and the cock, the possibility of leaks is practically eliminated.

The fact that the quantity of air and gas are simultaneously controlled prevents the presence of an explosive mixture in the mixing tube, and therefore no gas can be burned until it issues from the burner, thus precluding the possibility of back-firing.

The air opening being always closed when the valve is not in use, the possibility of its clogging with foreign extraneous matter is minimized, and the fact that there are no adjustments to be made on the mixer precludes its getting out of order or being tampered with by inexperienced hands.

The old-style standard mixers can be unscrewed from the burners and Hale mixers substituted on any gas stove without any other changes being made in the stove. The mixers are regulated and tested before leaving the factory to suit the gas conditions of the locality they are destined for, so that all that is necessary is to attach them to the burners, and they are ready for use.

In 434 B. C., when the stadium at Athens, Greece, fell during a performance, and 50,000 people were killed and injured, the women of the city banded together and formed what was probably the first "Red Cross Association" of history. They bound up the wounds of the injured, provided places where the seriously wounded might be treated, and did all in their power to lessen the sufferings incident to this disaster.

When the first hospitals were established in England, they were intended not only to take care of the ill and poor, but whatever pilgrims or travelers happened to pass by and demand a night's lodging. In order to protect the hospital from overcrowding by "knaves and schemers" who were not ill, the suppliant was forced to confess his sins and if absolved by the priest was admitted to the hospital for treatment or refreshment as his needs demanded.

In the early hospitals of France, the so-called "house physicians" were compelled to live within the walls of the hospital, and in the event of their marrying were forced to cease their connection with hospital activities. The reason for this, as set forth in ancient French poetry, was because it was feared that a physician's wife would cause him to neglect the patients in the hospital in order to remain at home with her.

King Ptolemy Seti of Egypt, thousands of years before Christ, was a most enthusiastic patron of the "medical science" of his day, and was the author of an exhaustive treatise on anatomy. He even formulated a set of rules for the guidance of his inspectors who looked after the hygienic condition of his cities.

In the Empire of India there are 723 medical institutions containing 5,672 beds. The Gokuldas Tejpal (Native General Hospital) at Bombay, founded in 1894, with a capacity of 120 beds, is managed and conducted by native Hindoo physicians and nurses.

PRIZES OFFERED FOR HOSPITAL AMBULANCES

British Commission, While Thinking About War, Is Doing Fine Service for the Future—American Hospital Experts Should Compete

Prizes to the amount of £2,000, or $10,000 in American money, are offered for the best design of a field motor ambulance, by the Wellcome Bureau of Scientific Research of London, England.

The Ambulance Construction Committee, which is making the offer, has set out to evolve the best possible field ambulance for the British army. The committee is composed of the following men of international prominence:

MEMBERS

Sir Frederick Treves, Bart., G. C. V. O., C. B., F. R. C. S., chairman British Red Cross Society; Major-General Sir John Cowans, K. C. B., M. V. O., Quartermaster-General to the Forces (represented by Brigadier-General S. S. Long, C. B., and Colonel H. C. L. Holden, C. B., F. R. S.); Surgeon-General Sir Arthur May, K. C. B., Director-General, Medical Department, R. N. (represented by Deputy Surgeon-General D. J. P. McNabb); Surgeon-General Sir Alfred Keogh, K. C. B., Acting Director-General, Army Medical Service (represented by Surgeon-General M. W. H. Russell, Deputy Director-General, Army Medical Service); the Right Hon. Sir Claude Macdonald, P. C., G. C. M. G., K. C. B., St. John Ambulance Association; Sir John Furley, C. B., St. John Ambulance Association; the Right Hon. Lord Montagu of Beaulieu; Professor W. E. Dalby, M. A., F. R. S., M. Inst. C. E., M. I. Mech. E.; John Robertson, Esq.; Andrew Balfour, Esq., C. M. G., M. D., Hon. Sec. and Treasurer, Director-in-Chief Wellcome Bureau of Scientific Research; secretary, Hardress O'Grady, Esq.

The Commission makes the following announcement concerning the competition:

Competition for prizes of £1,000, £500, £300 (and lesser sums) for the best designs of a "body" for, and improvements in, field motor-ambulances.

HISTORY OF THE PRIZE OFFER

Mr. Henry S. Wellcome, the founder of the Wellcome Bureau of Scientific Research, has intimated that the Bureau will provide a sum of £2,000 to be distributed in the form of prizes for the best plans and designs of a body for, and improvements in, field motor-ambulances.

As this is the first occasion when motor-ambulances have been used upon a large scale in war, it was inevitable that experience would show that they are capable of considerable improvement both from an engineering and a medical standpoint. Mr. Wellcome believes that, at a time like the present, men's minds are stimulated and alert, and that, therefore, it is more likely that valuable ideas and inventions will be forthcoming at this juncture than under normal conditions.

He is, therefore, desirous of giving those interested in ambulance construction, especially those possessing expert knowledge of the subject, an opportunity of exercising their talent, so that information may be forthcoming which will be of service to humanity, and which, when turned to practical ends, will serve to mitigate the sufferings endured by the sick and wounded in time of war.

The control and distribution of the sum mentioned is in the hands of a responsible and representative body, termed "The Ambulance Construction Commission," appointed on behalf of the Wellcome Bureau of Scientific Research. The Commission will collect, judge and report upon such plans, designs and ideas as may be submitted to it. Its functions will be of an international character, so that it may obtain information from all sources.

HEADQUARTERS OF THE COMMISSION

The Commission meets at the Wellcome Bureau of Scientific Research, 10 Henrietta street, Cavendish Square, W., London, England, whither all enquiries and all designs should be sent, addressed to The Secretary, Ambulance Construction Commission.

DISTRIBUTION OF THE PRIZES

The sum of two thousand pounds will be divided into a first prize of £1,000, a second prize of £500, a third prize of £300, and the remaining £200 will be awarded in smaller sums.

The first, second and third prizes are for a complete design of an ambulance-body complying with the conditions hereinafter laid down. The Commission reserves the right to award the whole or any part of the remaining £200 for details, such as an ingenious method of springing, an invention which could be applied to any motor-chassis, an ingenious method of storing arms and equipment, a novel system of lighting, mechanical devices for self-haulage, etc.

CONDITIONS

(A) Relating to construction.

(1) The body must carry, in comfort and safety, four wounded lying on stretchers of British Army Regulation Pattern,[1] or eight wounded sitting, or two lying and four sitting, in addition to the driver and orderly attendant.

(2) The patients must be sheltered from weather and sun, with due regard to ventilation. The driver and orderly must be provided with adequate shelter.

(3) The vehicle must be capable of being loaded from the ground level by four or fewer bearers.

(4) Every patient must be accessible for attendance from one side without being shifted from his position.

(5) There must be a vertical space of not less than two feet between the lower and upper tiers of patients.

(6) There must be sufficient windows to ensure ample light by day, and means of lighting the interior by night.

(7) There must be means for the orderly, on the box or elsewhere, to see every patient during running.

(8) There must be means of carrying the arms and equipment of the patients, some dressings, water, and small quantities of hot liquid in the vehicle.

(9) A vertical line through the center of gravity of the body must fall between the axles, whether the body is laden or empty. The center of gravity of the body must be kept as low as possible.

(10) The body must be kept as light as possible compatible with adequate strength.

(11) The materials of construction should be as non-inflammable as practicable. Competitors may be called upon to submit samples of material of construction.

(12) The body must be of such a design that it shall fit a chassis, the essential dimensions of which are shown in the accompanying drawing.

(13) In making the award, the cost of construction of the body will be taken into consideration.

(B) Any number of different designs may be submitted by any one competitor.

(C) Designs may be submitted on any date up to and including June 30, 1915. No designs received after this date will be considered.

(D) All designs will become the property of the Commission. In connection with this condition, competitors should read what is written below under the heading "Ultimate Object of the Competition."

SAFETY OF PLANS AND DESIGNS

Competitors should register the packages containing designs submitted. A letter of acknowledgment will be sent on receipt of each competing design. If this letter is not received after the lapse of a reasonable time, competitors should communicate with the Secretary.

ULTIMATE OBJECT OF THE COMPETITION

Since the object of the Commission is to improve the existing types of ambulance-bodies, and to produce, if possible, a standard pattern body of perfect design which shall fit standard chassis, all designs submitted by competitors will become the property of the Commission. Apart from the prizes there will be no payment made for designs, which the Commission may, if it approves of them, publish in some form or other. They can then be used in the cause of humanity. Arrangements will be made which will enable the Government and existing Ambulance Associations to test and at once utilize any idea or invention upon which the Commission may report favorably, and it is Mr. Wellcome's intention eventually to publish in a suitable and illustrated form, under the auspices of the Wellcome Bureau of Scientific Research, such material and information as the Commission may deem worthy of being preserved as a permanent record.

The Commission also gives the following hints to competitors:

HINTS TO COMPETITORS

The following suggestions, based upon an enquiry into the working of field motor-ambulances at the front, may prove useful to competitors:

(1) Any mechanism or device introduced into the body must be (a) easy to work, (b) simple in construction, (c) so made that it will not get out of order, rust or jam.

Complaints were made that some devices, apparently ingenious, were in practice tiresome, cumbersome and time-wasting. Others led to jamming of the stretcher.

In this connection it should be noted that the best type of British Army stretcher slides on runners, not on wheels. Where grooves are used for taking these runners, what is called "stretcher-spreading," or "stretcher-splaying," may lead to trouble, owing to the stretcher-runner getting jammed in the groove.

(2) Lateral oscillation, especially for the upper tiers of stretchers, must be avoided.

(3) The protection and comfort of the driver (and orderly) are points requiring very careful attention. Apparently satisfactory devices for the protection of the driver were found to act as wind-shafts which drove the air over his head, along under the overhead awning and down the back of his neck.

(4) The comfort of sitting patients is essential.

In some types of ambulance-body the seats are too low, or there is not enough room for the legs to be stretched, or the seat is too broad, or the structure of the body at the back of the patient is such as to cause acute discomfort, or there is insufficient support for the back.

(5) Any satisfactory, inexpensive method of heating the interior of the body will be taken into consideration when the final awards are made.

(6) Once the stretchers are in position in the ambulance they must be kept rigid. If straps are used for this purpose, rivets in the straps must on no account be employed, owing to their liability to perish.

(7) No ambulance-body can be considered satisfactory which is not readily convertible for carrying stretcher cases or sitting cases.

(8) The relation of the carrying capacity of a body to the strength of the chassis which bears it is of the greatest importance. Overweighting damages the chassis, and consequently the whole ambulance becomes useless. In practice it has been found that unauthorized persons will ride on any part of the outside of an ambulance on which they can get a footing. The body should therefore be so designed as to render impossible such overweighting by unauthorized persons. Intimately associated with this is the matter of overhang. [See also the next suggestion.]

(9) The back step should run the whole breadth of the body, and it should be possible to fold it away so that it cannot be used as a footing or seat by any unauthorized person.

(10) The material used for the covering of the body should be (1) light, (2) waterproof, (3) strong, (4) easy to replace, (5) easy to wash, clean and dry quickly.

Some materials used have been found to become soaked and to dry slowly. Others ceased to be waterproof where the red cross was painted.

(11) Access to the patient means access to any part of the patient, not merely to his head or feet.

On a forty-mile convoy journey it may be necessary to dress again the wounds of stretcher cases, or a wounded man may have to be held down.

(12) Ventilation, especially in warm weather, is essential. Equally important is the avoidance of dust and draughts.

(13) The question of some mechanical device, whereby stretcher-bases, especially those for upper stretchers, can be loaded outside the

[1] Dimensions: Canvas, 6 ft.; poles, 7 ft. 9 in.; width, 1 ft. 11 in.; height, 6 in.; weight, 30 lbs.

"body" at a convenient level and pushed back or levered into position, seems worthy of consideration.

(14) Provision must be made for the protection of tail-lamps.

(15) It is possible that a scheme might be devised whereby the position of a locker in the interior of the body, without interfering with the arrangements for stretcher cases, would occupy space in such a manner as to prevent overcrowding by sitting patients. [See above, No. 7.]

(16) It must not be forgotten that emergency stores of carbide and petrol, together with two days' rations for personnel (i. e., driver and orderly), must be carried. It has been found unnecessary in practice to carry special supplies of water for the wounded in each ambulance.

(17) Good ideas for shaded headlights, and improvements in motor horns are worthy of consideration.

Ambulance Construction Commission, 10 Henrietta street, Cavendish Square, London, W., England.

There is no good reason why American hospital people should not compete for these prizes. The satisfactory all-round hospital or field ambulance has not been built yet, and while service for war purposes seems to have been the desideratum in the minds of the commission offering these prizes, there is no doubt that the greatest usefulness for the successful ambulance will be found in times of peace. The great municipal hospitals are often hard driven to make the many ambulance calls that are needed, and an ambulance that would carry a number of people comfortably, some of them lying down and others sitting up, would go a long way toward solving these difficulties. There is also another point to be emphasized, especially in the case of this country: most municipal hospitals have, or are thinking about, convalescent branches in the country, and if these branches are to be made of the greatest possible service, there must be arrangements by which a considerable number of people can be transported from the hospital in town to the convalescent home in the country. A year or more ago, a report was made to the Board of County Commissioners of Chicago, suggesting an ambulance street car to take patients from the present Cook County Hospital on the West Side in Chicago to the Convalescent Hospital at Oak Forest, twenty-five miles away. The details of the proposed ambulance were not given at the time, and the Board has not finally decided to carry out the project.

Cleveland has a 2,000-acre farm fourteen miles from its present City Hospital, and as there is no direct transportation by street car, undoubtedly some sort of ambulance that will carry a number of people must be devised if the Convalescent Hospital is to fill its largest sphere of usefulness. Philadelphia has its Byberry farm, sixteen miles from the Philadelphia General Hospital, and just now the people of Philadelphia are awakening to the necessity of getting their convalescents to this farm; and nearly every city in this country, of any considerable size, is feeling the same necessity; therefore, the ambulance to be chosen by the British authorities will have a usefulness far beyond that of war times.

NEW NATIONALISM OUTLINED AT CONFERENCE OF CHARITIES

More Than Two Hundred Addresses on Questions Growing Out of the War, Legislative Policies, and Family and Community Problems

Announcement has been made from the headquarters of the National Conference of Charities and Correction of the revised program of its forty-second annual session, to be held at Baltimore, Md., May 12-19, 1915. The program, to be contained in an early Bulletin, includes the names of more than two hundred speakers. The character of this extensive series of discussions will be largely affected by social welfare legislation recently enacted in many states, by the reports by special state and municipal commissions during the winter, and by the recent emergence of many national issues of a social nature, such as have been disclosed in the investigations of the Federal Industrial Relations Commission. In addition, a growing conviction of the social bases of international amity has led to a greater definiteness in outlining fundamental issues in the United States. Hence considerable importance attaches to the subject of the keynote address of this Conference, "A Prelude to Peace," to be given by the President, Mrs. John M. Glenn, of New York.

Important additions to the program are a symposium on modern family ideals by Rev. Samuel McChord Crothers, D. D., of Cambridge, Mass., and Prof. James H. Tufts, of the University of Chicago; a practical program for the relief of unemployment by John B. Andrews, Secretary of the American Association for Labor Legislation, New York City, and Prof. George E. Barnett, of Johns Hopkins University, Baltimore; and the "Need and Practicability of Illness Insurance in the United States," by J. P. Chamberlain, of Columbia University, New York. The last two subjects are examples of a series of discussions that have been arranged reflecting in American experience problems and a need of public policy in fields that have long been the center of discussion in European countries. Considerable profit was anticipated in this respect from addresses to have been given by the late Prof. Charles Richmond Henderson, of Chicago, a former president of the Conference, whose life the organization will be called upon to memorialize. One of the unique features of the program is a discussion of the work of policewomen under the leadership of Mrs. Alice Stebbins Wells, of Los Angeles, to be participated in by policewomen from various cities.

The coming of the Conference is being anticipated by the City of Baltimore, which is making a survey of local social conditions to be set forth in a public exhibit. The chairman of the Baltimore committee is General Lawrason Riggs, and the secretary, Dr. J. Hall Pleasants. Preparations are being made to entertain twenty-five hundred guests. The address of welcome will be made by President Frank J. Goodnow, of Johns Hopkins University.

Of scarcely secondary importance to the National Conference program are the meetings of a series of related organizations, nine of which have published programs. These include the American Red Cross, the Association of Officials of Charity and Correction, the National Federation of Settlements, the National Probation Association, the Association of Jewish Social Workers, and the Societies for Organizing Charity.

AUTOPSIES IN HOSPITALS

European Authorities and Public Highly Enlightened as to Value of the Post-mortem

The problem of the hospital is no longer limited, as in the pre-bacteriological days, to providing food, warmth, rest and treatment for the diseased individual, but has broadened into a social and scientific warfare on disease itself. The patient is not merely an individual, but a warning of economic maladjustment, or a problem of hygienic ignorance. Scientific thinking is necessary if we wish to deal effectively with results of present conditions. The hope of future generations lies in ascertaining and removing the causes of disease, attacking it at the source and preventing its spread. An intelligent conception of causation of disease, the extent of the involvement, the relationship of affected parts to each other, and the ceaseless fight of the bodily mechanism to achieve readjustment, can only be acquired in the autopsy room.

The post-mortem in this country is precarious and relatively rare. Unless we are content to have our medical

staffs continue to lag hopelessly behind in diagnosis, we must give our prospective physicians more opportunity to compare laboratory findings with symptoms shown by patients in the hospital wards, supply them with more post-mortems and facilitate their access to our autopsy rooms. We must bring authorities and the public to the realization that the interests of science and the interests of the community are in the long run identical, that the autopsy is not to satisfy the interest of the pathologist alone, but an absolute necessity in the education of the clinician on whose ability as a diagnostician the proper treatment of disease depends.

Every precaution must of necessity be taken to obviate the objections of the family to the post-mortem. The relatives must be tactfully handled and, if scrupulous deference is shown to the feelings of those concerned, offense will very rarely be taken and consent more often obtained for an autopsy.

In Germany the attitude of the authorities and the public to the post-mortem is generally favorable and highly enlightened. At the time of the building of the Algemeines Krankenhaus in Vienna, late in the eighteenth century, it was provided that as a matter of right and duty every death must be autopsied. Throughout the German Empire the consent of the nearest relatives is usually required, and as a rule is obtained. The number of post-mortems each year at the Algemeines Krankenhaus in Vienna is above 2,000; at the Charité, Berlin, 1,300 to 1,400; and at the Munich Institute, about 1,200. That education of the public is necessary and within the realms of possibility, is admirably illustrated by statistics of the post-mortems made in Leipzig from 1820 to 1907. In the twenties some 12 to 15 autopsies were yearly performed, and the figures steadily rose to 1,531 in 1907. The amount of material for post-mortems in the large cities of Germany is thus enormous, and in the smaller centers always quite adequate.

Between 80 and 90 percent of the cases ending fatally in London are autopsied. Guy's Hospital has always made the same stipulation as to post-mortems as the Algemeines Krankenhaus of Vienna—every death is autopsied and the yearly roll is approximately 700. About 1,300 post-mortems take place yearly at the London Hospital; 600 at St. Bartholomew's; 500 at the Middlesex; 350 at St. Mary's; 200 at Charing Cross; and 200 at Westminster. The sentiment toward autopsies in Scotland and the provinces is less favorable, the annual average of post-mortems at the Royal Infirmary, Edinburgh, bordering on 500 (about 55 percent of the deaths); at Glasgow, 250; at Newcastle, around 300; at Liverpool, 150 (50 percent of the deaths); and at the Royal Infirmary, Manchester, about 200. The hospital dead houses throughout France give the interns unrivaled opportunities to study morbid anatomy, and full advantage is taken of these opportunities by the French students and physicians.

As long as hospital trustees in America continue to consider that they have done their full duty to patients in their wards by supplying skilful medical attention and careful nursing, and the medical staff retain for themselves all the opportunities the hospital affords, the strange anomaly of American graduates in medicine asking for and obtaining entrance to the clinics and autopsy rooms of Berlin, Vienna, Munich, Paris and London will continue.

Look Out for This Swindler

The Victor Electric Company, Chicago, wishes to warn the public, especially physicians and hospital superintendents, against a young man traveling about the country under the name of Paul Goodman and representing himself to be in the employ of this company. According to reports that have come to the Victor company, this person, who is described as a small man about twenty-two years of age, with disfiguring scars, has been calling on physicians in Indiana and Nebraska and gaining their confidence on the strength of his purported connection with the Victor Electric Company to the extent of inducing them (the physicians) to cash worthless checks, some of which were personal, others forged. The Victor people disclaim acquaintance with this man and say that he has never been in their employ or handled their goods either directly or indirectly. They will consider it a favor if anyone hearing of his operations or whereabouts will send them a telegram at their expense, and they request that if possible the man be kept under surveillance until one of his victims can swear out a warrant for his arrest.

ROUND TABLE HOSPITAL CONFERENCE

Hospital Superintendents of New York and Jersey Entertained at New York Skin and Cancer Hospital

Many of our eastern superintendents have long felt the need of a meeting ground where not only routine questions and new problems arising in the ever widening hospital field could be informally discussed, but where a closer cooperation could be established through better acquaintance with the other fellow's successes and failures. The Board of Trustees of the New York Skin and Cancer Hospital, through Miss Sara G. Burns, recently extended an invitation to the superintendents of New York and neighboring Jersey to utilize one of their large assembly halls for a round table conference. A goodly number responded and Mr. Oliver Bartine was asked to preside. Mr. Bartine spoke of the round table talks enjoyed at the meetings of the American Hospital Association, their real benefit to the superintendent and the enthusiasm always displayed in discussing the various hospital problems.

After two hours of a lively interchange of ideas regarding several questions submitted for discussion, refreshments were served and the superintendents present were unanimous in voting that such meetings be "made a habit."

Miss Burns, in responding to a vote of thanks "for the good work she had done toward making the meeting a success, and the courtesy of the Board of Trustees in extending their hospitality," suggested that the second round table talks be held at the same place, about the end of April, and combine discussion with a homecoming and reception for Dr. C. Irving Fisher. This invitation was accepted and the date for the second meeting fixed for April 24, 1915.

Professor Lindsay, M. D., F. R. C. P., in a recent lecture delivered in the Technical Institute, Belfast, stated that there were at one time 20,000 leper hospitals in Europe.

The Chinese, five hundred years before the dawn of the Christian era, had developed a regular hydrotherapeutic technic for the cure of skin diseases. In old Manchurian records are found descriptions of apparatus and procedure for administering the "water cure," which closely resembled the hydrotherapeutic department of modern hospitals.

Life is a hospital in which every patient is possessed by the desire of changing his bed. One would prefer to suffer near the fire, and another is certain that he would get well if he were by the window. *From Poems in Prose, by* CHARLES BAUDELAIRE.

THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. IV *June, 1915* No. 6

THE CHICAGO LYING-IN HOSPITAL AND DISPENSARY

A Special Maternity Group Including an Isolation Pavilion—Each Feature Designed to Protect Mothers and Infants and to Make the Work Easy and Convenient For Medical Men

By JOSEPH B. DeLEE, M. D., and Richard E. Schmidt, Garden & Martin, Architects

SHORTLY after hospitals became an established institution in civilized communities—about the beginning of the eighteenth century—obstetric cases also were received in them. At this time, too, special maternity hospitals were established in Paris, London, Leipsic and Vienna. Soon frightful epidemics of puerperal fever broke out in all these places, and as high as 20 percent mortality was recorded in many of them. A popular clamor arose against such institutions and many physicians publicly demanded their closure, claiming that it was safer for the women to be confined at home—which was true.

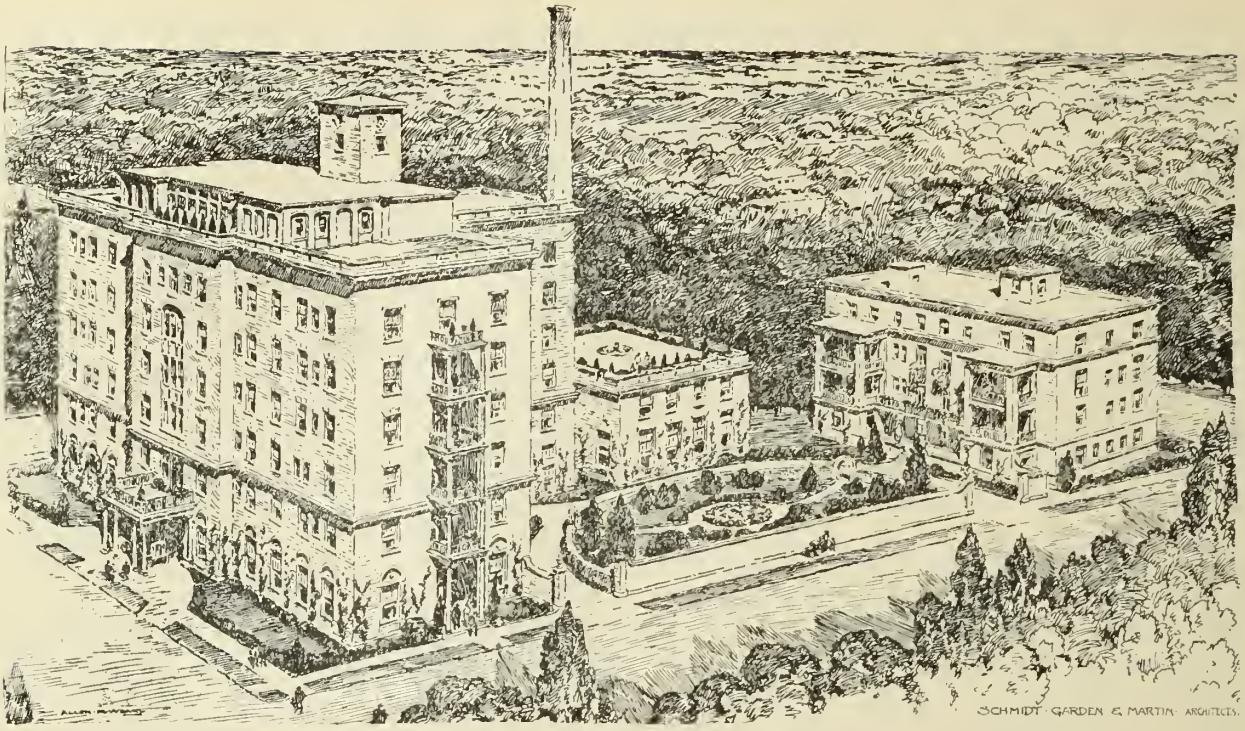
Modern asepsis and antisepsis have in general reversed all this. The parturient is now safer in a maternity than in the home; but the maternity must be properly constructed and adequately equipped, and the accoucheurs, too, must be properly instructed and mentally equipped.

Furthermore, our ideas regarding mortality and our ideals regarding good obstetrics have much changed in the last hundred years. Formerly if the mother got through alive and the child was not seriously damaged we considered it good obstetrics. A maternal mortality of one percent and a morbidity of 40 percent were held as being very tolerable.

This, too, has all changed. Nowadays we wish all the mothers to come through alive and perfectly well, and all the babies to be the same. If a maternity has a mortality of more than one-tenth of one percent and a morbidity of more than 15 percent, its methods are rigidly investigated. The children, too, are being evaluated higher. A fetal mortality of 5 percent is not considered justifiable nowadays. Measured by the above standards, few lying-in hospitals will qualify, and a still smaller number of maternity wards in general hospitals will meet the requirements. Why the distinction? The writer has always held that the medical and surgical wards of the general hospital are a menace to the maternity ward, and he bases his opinion on experience accumulated during twenty years' attendance in five of such general hospitals.

The maternity ward suffers two dangers: first, and most important, the danger of infection carried from the infected cases in the hospital; second, the danger of neglect. The maternity ward does not receive the service given the surgery, for example. The interns rotate rapidly through it, simply to get their experience, and the nurses likewise are changed frequently. Just as soon as they are a little bit proficient they are replaced by novices just as ignorant. Few hospitals can afford to have a maternity head nurse, and as a result a perfect technic cannot be developed. The patients for all these reasons receive continuously poor service. The equipment of the maternity ward, too, as a rule, is inferior to that of the surgery; generally it consists of the furniture cast off when the surgery got new and modern equipment. All these things affect the quality of the work done by the attending physicians, and hospital superintendents will need no enlightenment on this subject.

Question may perhaps be raised regarding the first statement, that infection is carried to the maternity patient and her baby from the surgical



Chicago Lying-in Hospital and Mothers' Aid Pavilion.

and medical wards. The writer is firmly convinced that this danger is real, and has abundant evidence to prove it. How the infection is carried is not so easily determined. The doctors and the nurses may be the most immediate carriers. The dressings, utensils, and bed linen must be considered possibilities, and finally, but by no means leastly, the dust and air.

Modern sanitarians are very doubtful of the possibility of infection being carried through the air; unaided, perhaps, the air cannot do it. Every reader of these lines will readily recall instances where after pus has been spilled on the floor the doctors and nurses have tracked it through the hospital. That dried pneumonia sputum is also thus disseminated is likewise true. That this dust can fall on sterile instruments, sterile gloves, catgut, solutions and dressings and thus gain access to the parturient canal—which in reality is an open wound—is not a bare assumption. Since bacteriologists have proven time and again that bacteria and their spores live hours and days in dust, even in sunlit rooms, the possibility of the dust being infectious is not to be dismissed lightly.

The writer is willing to admit, however, that direct carrier infection is the most common mode of transmission, and no one will deny that when a hospital is full of infected cases, medical, surgical and children's, the possibility of some one's being careless and thus transporting bacteria to the maternity ward is tremendously increased.

Take another possibility: do the nurses or the orderlies invariably sterilize in the big steam apparatus everything to be sterilized as positively as necessary? *Can anyone be trusted always to do everything perfectly?* How about the boiling of clothes the required time in the laundry? Has any hospital superintendent ever placed a time-lock on the steam washer? Instances might be multiplied of the carelessness, ignorance, inability, fallibility and forgetfulness of doctors, nurses, scrubwomen, laundresses, orderlies, etc.,

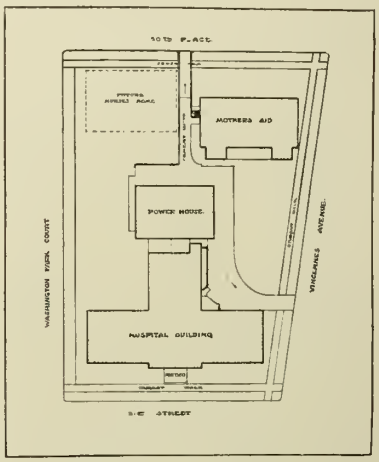


Fig. 1. Chicago Lying-in Hospital. Plot plan.

and the writer therefore insists that we should construct our hospitals so as to eliminate this great and dangerous element of human weakness as far as it is possible. It follows, naturally, that it would be fatuous to trust to "administrative" protection for the clean cases against the infected ones. There must also be "architectural" protec-

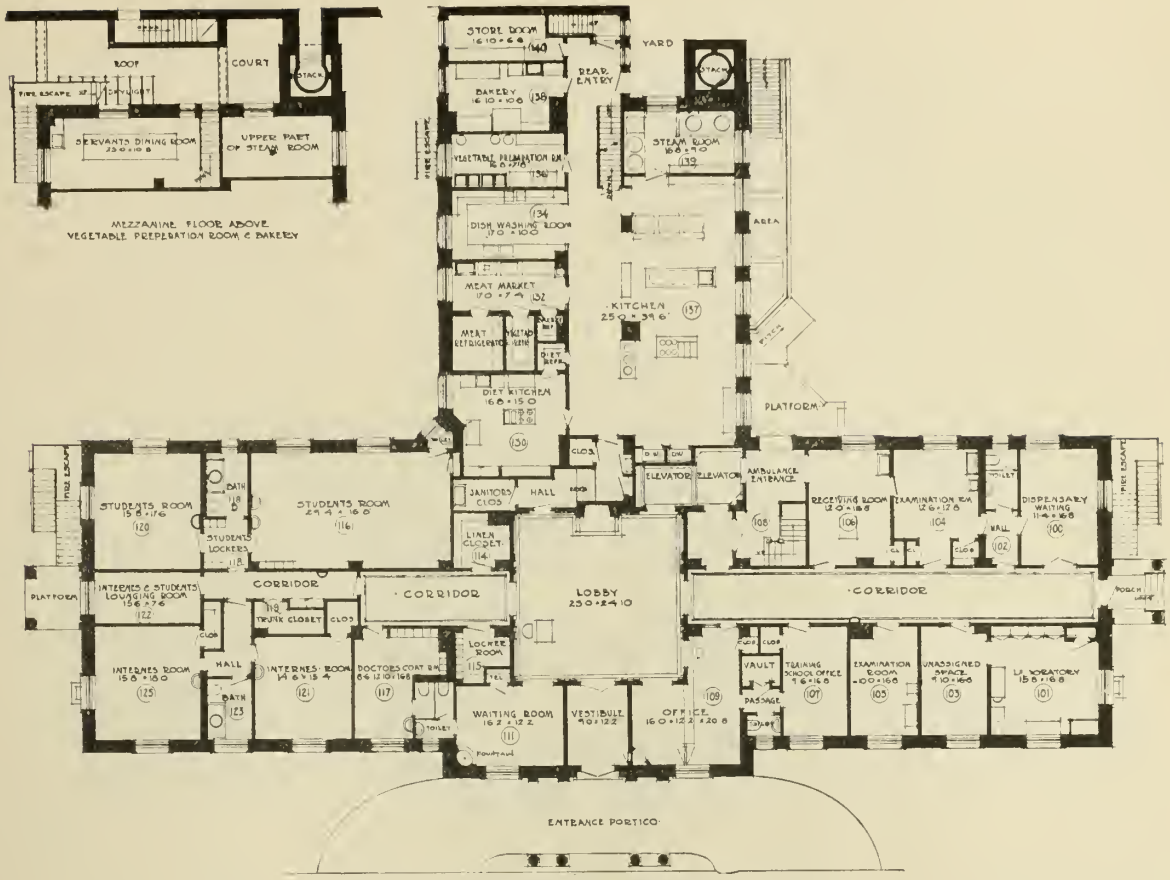


Fig. 2. Chicago Lying-in Hospital. First floor plan.

tion. Not alone must the parturient receive the protection afforded by asepsis and antisepsis, by hospital cleanliness, by individual utensils, etc., but she must be moved from the proximity of infected cases, into a separate building, attended by a separate and distinct personnel.

The maternity case differs from the surgical case. The parturient canal is an open, aseptic (as far as invasive bacteria is concerned) wound—open for several weeks. The surgical wound is either sewed up or covered with impervious dressings, or both.

Nor may the baby be forgotten. He is a sterile culture medium, easy prey to the hosts of friendly and malicious bacteria ready to attack him upon his entrance into this world.

The new Chicago Lying-in Hospital was designed to eliminate, or at least obviate as much as possible, the evils indicated above. In the first place, the building was to be a monument to obstetric ideals. The architects were instructed to make it beautiful and imposing. Fronting Washington Park, the highest building in the neighborhood, it truly presents a majestic appearance. Its dignified exterior paying homage to the importance of the obstetric case, and the interior arrangements are as elaborate and as carefully worked out, as to operating rooms (called birth rooms), free wards, private rooms, service rooms of all kinds, as the best surgical hospital in the country. In the main building a certain number of gynecologic cases will be cared for, mainly those that really belong to obstetrics.

While the most rigid requirements of hospital aseptic construction have been completely met, the building has been rendered very homelike and uninstitutional. Since, in common with all semi-public hospitals in this country, it is necessary to secure an income from private rooms to help pay for the free cases, the arrangements of the wards and rooms are such that one class of patients is kept distinct from the other. Yet the medical service rendered both is the same. The birth rooms of the free cases occupy one wing, those of the private cases another, but the appointments are identical. On the ward floors the same is true. The largest ward is of four beds only, the object being to assure the comfort of the patient and to limit the spread of possible epidemics. Each floor has a large sunlit nursery and an overflow nursery is provided on the floors with many patients. Each nursery has an ante-room for the baths, diaper traffic, sterilizing, etc., thus keeping these annoyances from the infants.

The most important part of a hospital, however, is not beautiful views from the windows, white tile floors and elaborate appointments; it is the technic—the system of conducting the work—and

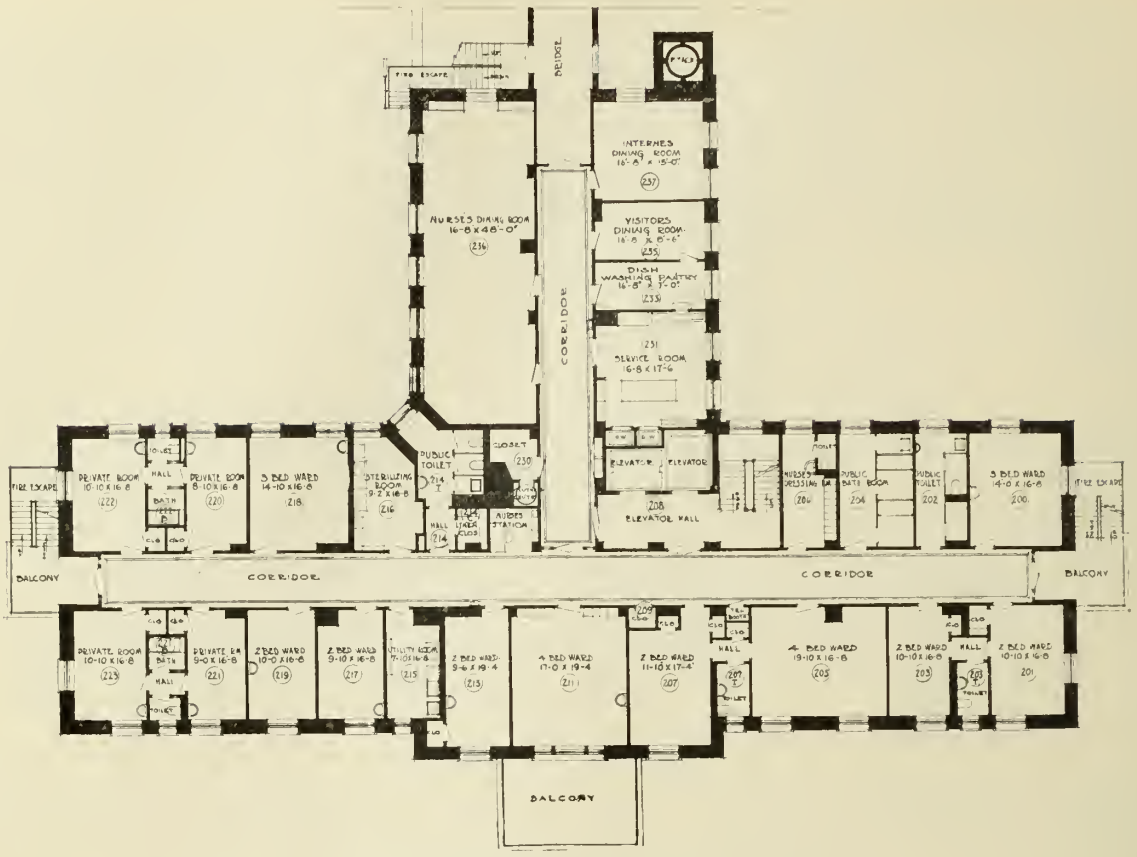

BRIDGE
INTERNES DINING ROOM 16-8 X 15-0 (237)
NURSES DINING ROOM 16-8 X 48-0 (236)
VISITORS DINING ROOM 16-8 X 15-6 (235)
DISH WASHING PANTRY 16-8 X 7-0 (233)
CORRIDOR
231 SERVICE ROOM 16-8 X 17-6
PUBLIC TOILET
CLOSET 230
ELEVATOR
ELEVATOR
208 ELEVATOR HALL
NURSES DRESSING RM 206
PUBLIC BATH ROOM 204
PUBLIC TOILET 202
3 BED WARD 14-10 X 16-8 200
FIRE ESCAPE
PRIVATE ROOM 10-10 X 16-8 (222)
PRIVATE ROOM 8-10 X 16-8 (220)
3 BED WARD 14-10 X 16-8 218
STERILIZING ROOM 9-2 X 16-8 216
HALL 214
NURSES STATION
BALCONY
CORRIDOR
CORRIDOR
BALCONY
PRIVATE ROOM 10-10 X 16-8 (223)
PRIVATE RM 9-0 X 16-8 (221)
2 BED WARD 10-0 X 16-8 (219)
2 BED WARD 9-10 X 16-8 (217)
UTILITY ROOM 7-10 X 16-8 215
2 BED WARD 9-6 X 19-4 213
4 BED WARD 17-0 X 19-4 211
2 BED WARD 11-10 X 17-4 207
HALL
4 BED WARD 19-10 X 16-8 205
2 BED WARD 10-10 X 16-8 203
2 BED WARD 10-10 X 16-8 201
BALCONY

Fig. 3. Chicago Lying-in Hospital. Second floor plan.

the most essential part of this is the manner in which the patient is protected from infection.

Speaking now of the maternity hospital, we must say that infection is the greatest danger menacing the patient. Eclampsia, post-partum hemorrhage, rupture of the uterus, altogether do not take as many lives as puerperal infection. While the physician is more directly responsible for deaths due to the former, the hospital is to a certain, though by no means large, extent, responsible for the latter. If the infection is not immediately fatal it often leaves the woman an invalid for life. Mild degrees of infection that might pass unnoticed often leave permanent pathologic changes rendering the woman a constant sufferer. Such infections are still too frequent. In order to reduce these dangers to a humanly irreducible minimum, both the architectural and the administrative methods of isolation of infected cases were instituted in the new hospital. While we imbue the whole personnel with the principles of obstetric asepsis, and carry them out with the completeness of the finest surgery, we have provided for the absolute isolation of the infected cases, have arranged the building so as to prevent the accidental introduction of infection and have devised means of checking any possible spread of infection which might develop in the building. We hope that in this manner the sad consequences of human frailty will be eliminated. At least, should infection attack the mother or babe, the hospital may surely be justified in feeling "not guilty."

The isolation building, known as the "Mothers' Aid Pavilion," is a complete hospital of 14 rooms. The workers in this pavilion live in it; they do not mingle with those of the main building. Provision is here made also for the isolation of individual cases; but this description will be reserved till later. Suffice it here to say that a certified infected obstetric case is taken to this pavilion and does not enter the main hospital at all.

All cases entering the main hospital for delivery are taken to the admitting room on the first floor. Here the temperature is recorded, suspicious discharges are investigated, and, where necessary, the preparatory bath, shampoo, shaving, enema, etc., are given.

Attired in sterile clothes, the parturient is taken to the sixth floor—the labor rooms. Private room cases and house waiting women are prepared on the sixth floor. Frankly suspicious cases are sent to the isolation pavilion. Where there is only a little doubt the delivery is conducted downstairs or in the gynecologic operating room on the sixth floor. After delivery the mother and infant are transported to the wards.

With few exceptions the wards and rooms are

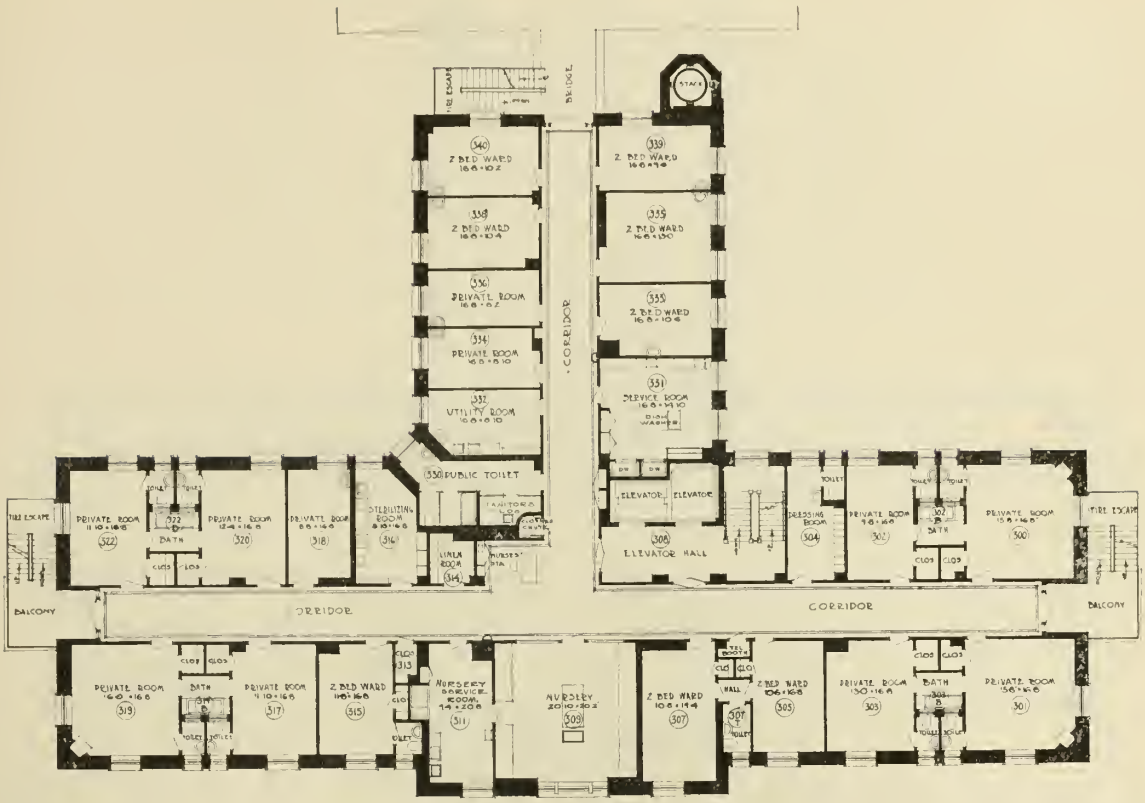


Fig. 4. Chicago Lying-in Hospital. Third floor plan.

provided with individual toilet arrangements. This reduces very much the bed-pan traffic through the corridors (always embarrassing to both nurse and visitor) and it also limits the infection if such should arise. The individualization of cases is thus better maintained. Should puerperæ or babies develop fever or suspicious eruptions or discharges they are at once removed to the *observation rooms*, of which there is one on each floor. If the sickness passes quickly the patient is permitted to return to the ward or may go home from this room. If the case is serious it is transferred to the isolation pavilion.

It is hoped and confidently anticipated that the medical profession will appreciate these arrangements as an earnest effort to preserve the lives and health of their patients and to safeguard their own interests. The institution will be an "open hospital," all reputable physicians being invited to bring their cases to it.

On the fifth floor an incubator room is to be maintained. Four gas-hot-water-heated incubators, each with separate air-intake and exit flue connected directly with the outside air, will be installed and there will be room also for six "graduates" of the incubators. An incubator ambulance will transport premature infants from the homes, or nearby towns, to the hospital.

The hospital will enlarge and extend the teaching facilities of the dispensary. In the latter students have received obstetric training for nearly twenty years. Now post-graduate obstetric instruction will also be given. A small amphitheater is in direct connection with the birth rooms, and here pathologic cases in abundance will be delivered. The board of directors has outlined a broad policy regarding free cases—and physicians and midwives will be invited to send their complicated labors here for delivery.

On the seventh floor there is a manikin room for the teaching of operative obstetrics on the rubber phantom; a library and a general lecture room. Here also is the x-ray laboratory, to be used mainly for picture work of an investigative nature.

Finally, a few words about the isolation building: this is called the Mothers' Aid Pavilion, having been erected by the Mothers' Aid Club, a society of energetic young women, for the express purpose of providing a haven for the most complicated and desperate obstetric cases occurring within our transportation area. Sepsis, neglected labors, cases outside physicians have failed to deliver, midwife cases, pregnancy with appendicitis, pneumonia in pregnancy, parturients from homes where scarlet fever or diphtheria exists; in short, all such cases that are generally undesirable in hospitals will be welcome in this building—and it has been constructed with a view to care properly for them and to prevent cross infections.

There are fourteen rooms available for patients, and each room can be practically isolated

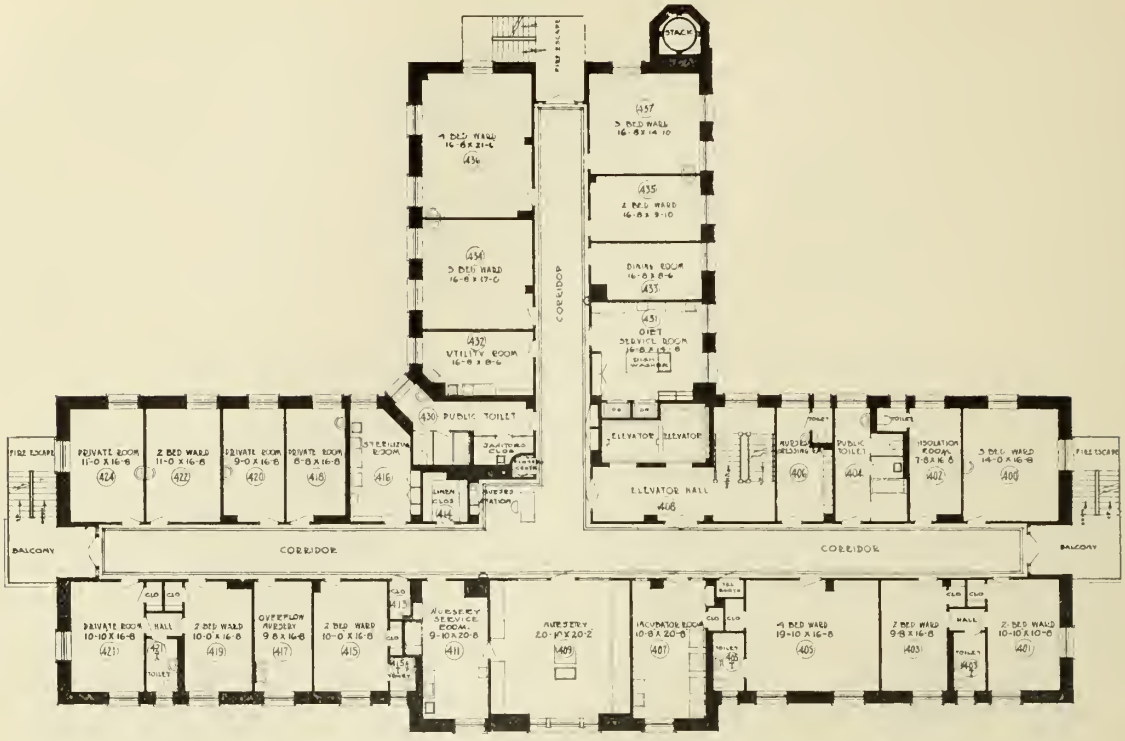


Fig. 5. Chicago Lying-in Hospital. Fourth floor plan.

from the rest. The relatively clean cases will be on the third floor, the very septic ones on the second. Six of the rooms on this floor open on a balcony surrounding the building, so that, if need be, the patient can be cared for from the outside. Each of these rooms has its own toilet facilities and an individual sterilizer, so that the only connection with the rest of the building is through the dishes, and these are sterilized by steam before being sent to the kitchen. The infected dressings are collected by way of the balcony from the porches, in bags, and burned in an incinerator at the end of the balcony. On the first floor a disinfecting room receives the bed linen, the mattresses, pillows, etc. The latter are put through a high-pressure steam sterilizer; the linen passes through an antiseptic steeping vat before reaching the laundry. This building has its own complete laundry, and the linen is specially marked.

In the operating department the same limitation of the infected material is practiced. The pads and dressings are burned in an incinerator next to the operating rooms, and large sterilizers are here placed for the immediate disinfection of everything that has come in contact with the infected case. A dish sterilizer and a bed pan sterilizer are found on each floor.

On the fourth story live the nurses and servants who operate the pavilion. They do not mix with the personnel of the main building—thus the danger from "carriers" is eliminated. The interns live in the building for the same reason. The pathologic laboratory is also a distinct part of this isolation pavilion. In short, the general isolation of the septic pavilion is consequentially carried out and the individual isolation is carried out to a degree that is reasonable and practical. In addition, the septic nursing of the cases—so-called administrative isolation—will be rigidly practiced, as experience has shown that this method is needful and supplements the other.

THE ARCHITECTURE

BY RICHARD E. SCHMIDT, GARDEN & MARTIN, Architects

The site of the new main buildings of the Chicago Lying-in Hospital and Dispensary is a whole city block between 50th Place, Vincennes Avenue, 51st Street and Washington Park Court. The block is irregular in shape, and has an area of over 50,000 square feet.

The site is a particularly fortunate selection for a city hospital, inasmuch as the south side faces Washington Park, an open, fully improved area of 320 acres. One obtains a beautiful view of the park, also pleasant views in other directions, inasmuch as the locality is a residential section of the city. On one side of the hospital is the Home for the Friendless, a building of much architectural merit. The large playground or meadow in the center of Washington Park, surrounded by roadways, trees and shrubbery, is visible from the roof garden, the upper stories and porches, and in the distance to the east may be seen the blue waters of Lake Michigan.

The block plan illustrates the shape and location of the several buildings. Of these the isola-

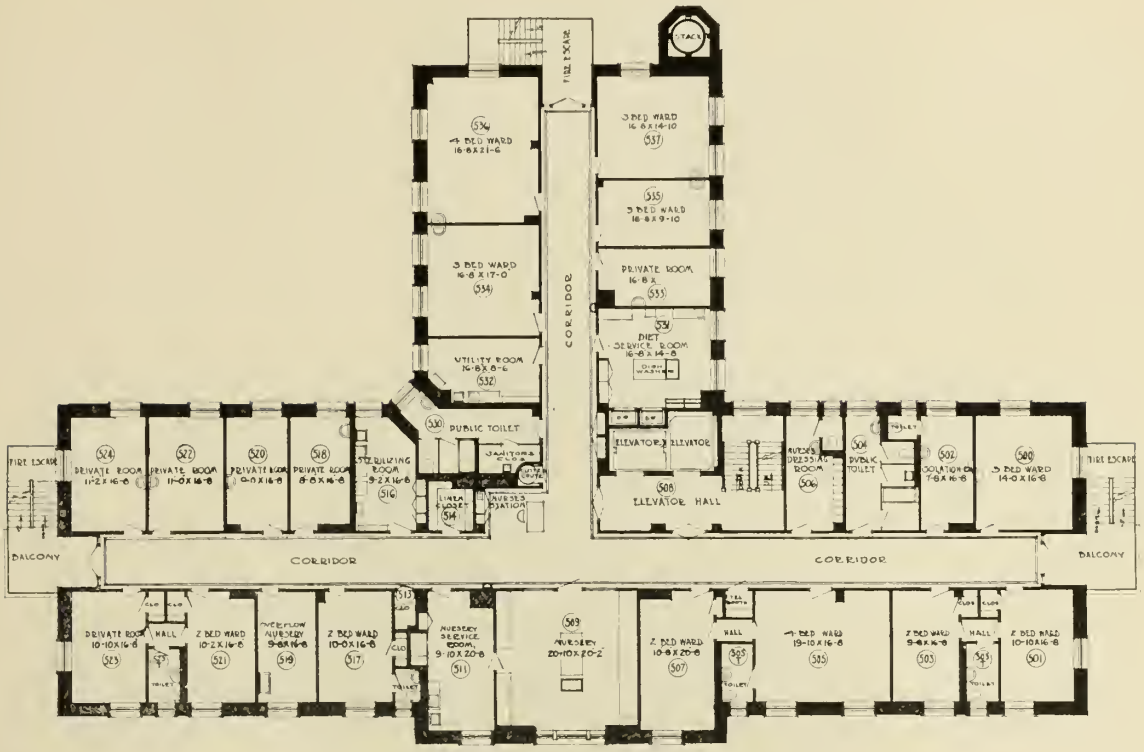


Fig. 6. Chicago Lying-in Hospital. Fifth floor plan.

tion building and the power house were placed in operation early in November. The main hospital building is in course of construction; it is now under roof and will be ready for operation in the fall of 1915. A nurses' home is under discussion. Plans have been made for it and this will be described later.

The main building covers 9,475 square feet and is seven stories high, including the solarium, library, lecture rooms, etc., which occupy the top floor. The isolation building covers 4,200 square feet and is four stories high. The power house covers 3,150 square feet, two stories high, making a total of 16,875 square feet, or about one-third of the whole area of the site.

All of the buildings are of the same style of architecture. The exterior is faced with rough, vitrified, reddish brown brick, stone colored terra-cotta and Indiana limestone base courses.

The central power house contains two boilers, one 75-kilowatt and one 50-kilowatt generator set, and a twelve-ton refrigerating machine and ice-making plant; pumps for house water service, fire pump, and vacuum cleaning machinery. Space has been provided for a third boiler.

Rooms for patients' clothes and medical stores are on the mezzanine floor. The laundry, linen room and mending room are on the second floor. This building is open on all sides so that it is well illuminated and thoroughly ventilated.

The power house and laundry are connected with the main hospital building by a tunnel and by a bridge. The soiled linen will be taken from the hospital chute to the laundry and clean linen will be carted from the linen room to the main building over a bridge at a level with the second floor. The power house building is designed to be of sufficient capacity to serve adequately all of the buildings, including the proposed nurses' home.

The isolation building, also known as the Mothers' Aid Pavilion, is four stories high, of fireproof construction, with the first floor on the ground, which is a deposit of coarse, dry sand fully fifteen feet in thickness, so well drained that it is always dry. The isolation building is not connected with the other buildings, with the exception of a pipe tunnel connecting it with the steam, water, refrigeration, electric, clock and other service originating in the power house.

The plans illustrate the arrangement of the floors of the isolation pavilion.

The first story contains the office, service and interns' bed rooms. It also contains a small laundry, disinfecting room, pathological laboratory, kitchen, nurses' and helps' dining room.

The second story is arranged wholly for patients, with only one bed per room. Every room has a bath or toilet and most of them have connection with outside porches, so that each one may be fully isolated. Six of them have individual sterilizers.

The third story contains the delivery, sterilizing and nurses' work rooms, but is otherwise like the second story.

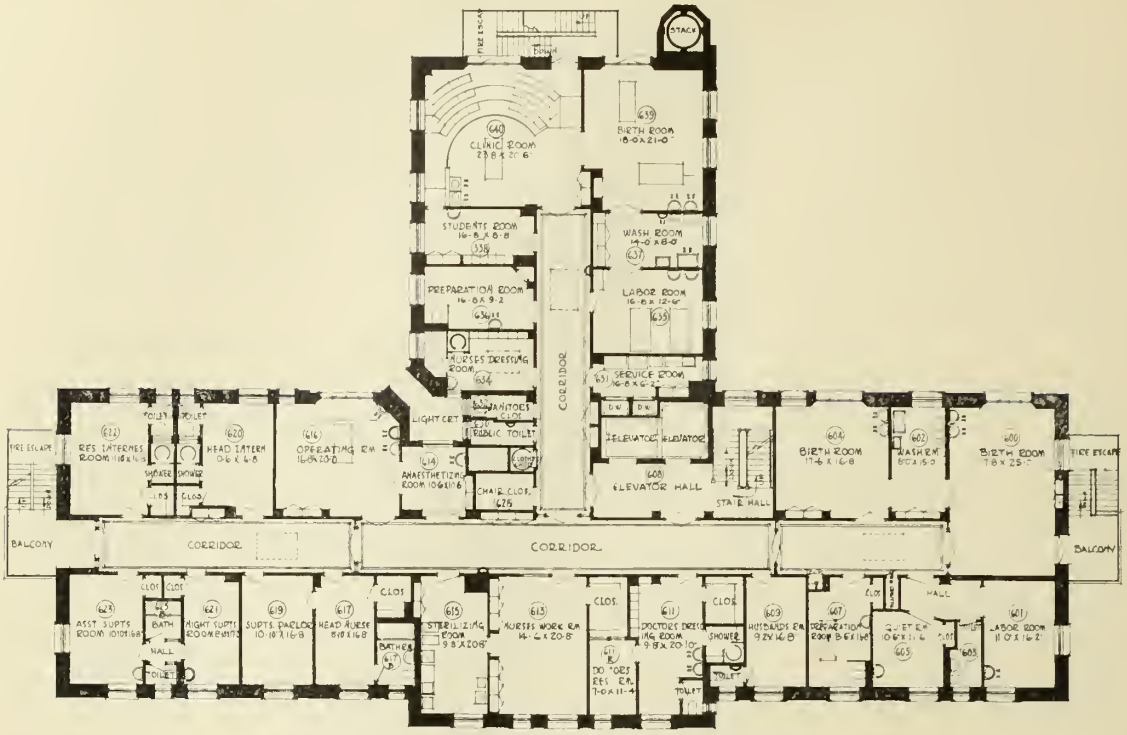


Fig. 7. Chicago Lying-in Hospital. Sixth floor plan.

The fourth story is intended for nurses' rooms, but is temporarily being used for patients, with two beds in each room.

Some of the particular features of the buildings are as follows:

The floors, baseboards and plinth blocks are of terrazzo throughout the building, with the exception of the floors in the nurses' rooms, which are of battleship linoleum, cemented solidly to Portland cement sub-floors.

case with the usual glaring white walls of operating rooms.

MAIN HOSPITAL

The whole of the first floor is to be used for receiving offices, interns' rooms, students' rooms, examination rooms, laboratory, out-patient department and kitchens. The latter are in the rear or north wing. Their floor is about three feet lower than the general level of the first floor, to obtain a greater height for this department.

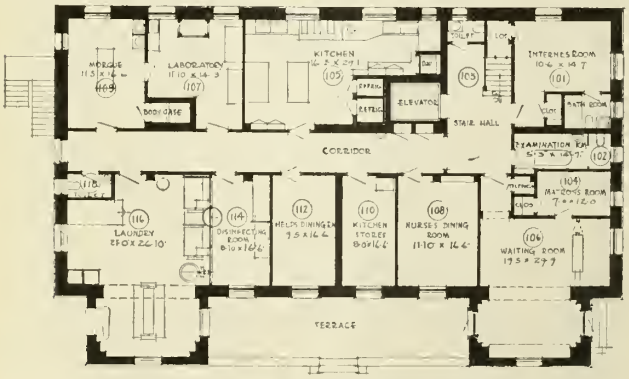


Fig. 9. Chicago Lying-in Hospital. Mothers' Aid Pavilion, first floor plan.

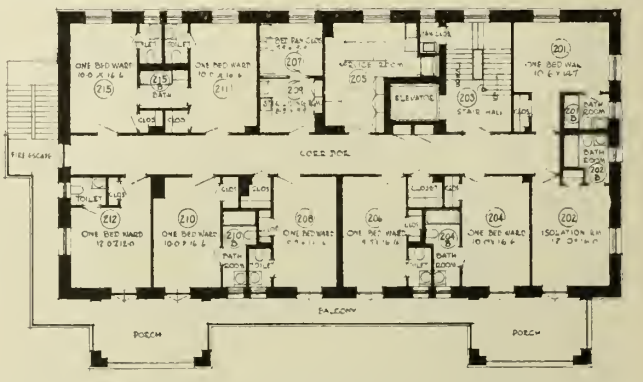


Fig. 10. Chicago Lying-in Hospital. Mothers' Aid Pavilion, second floor plan.

The door frames are of moulded drawn steel, flush with plaster. The coloring of the rooms and corridors is in a variety of harmonious tints, especially pleasing in their effect. The extensive porches are unusual.

The walls and woodwork of the delivery room are painted a grass green, which is expected to be restful to the eyes of the operator, as is not the

A portion of the basement of the rear wing is arranged for kitchen stores, male and female help's lockers, elevator machinery, water sterilizers and a passageway for the engineer, connecting the basement of the power house with the elevator and dumbwaiter machine room. The remainder of the basement is low, undivided and is to be used only as a pipe space.

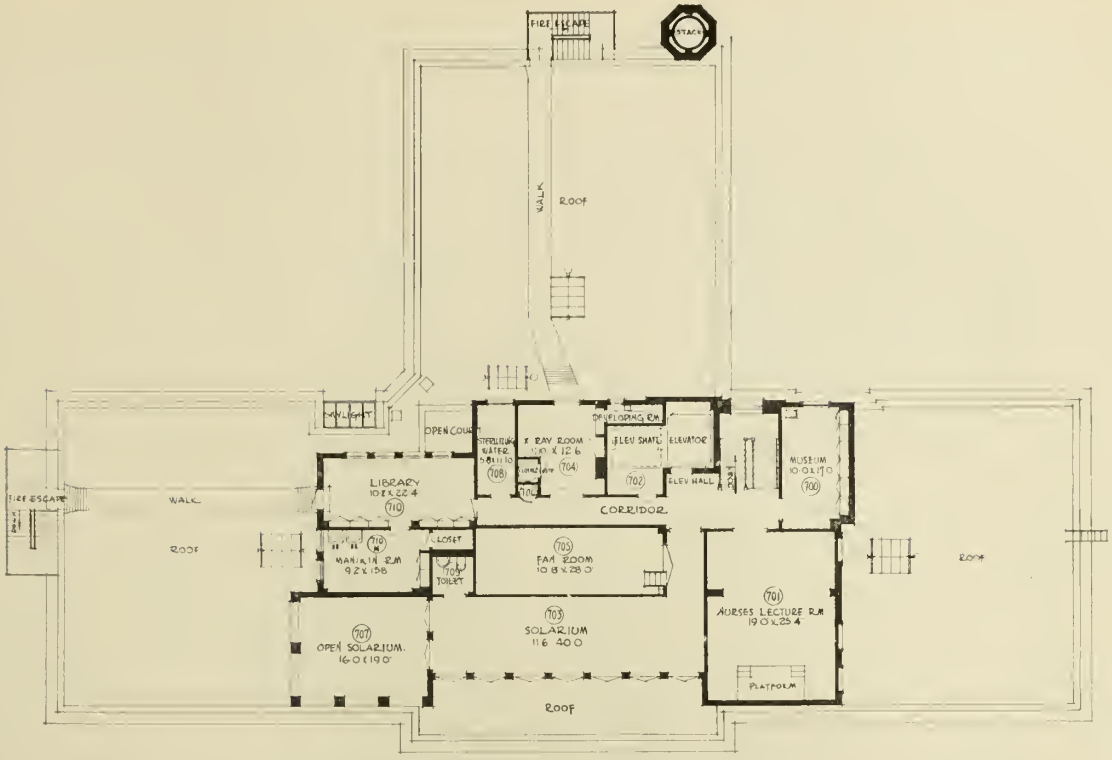


Fig. 8. Chicago Lying-in Hospital. Roof and roof garden plan.

The building is to have two elevators arranged so that both can be used for general service, but one is to be particularly for ambulance service when this is desired, and will be screened from view by an arrangement of separate entrances in the first or ground floor.

The main stairs are enclosed in a separate stair hall. The second story is divided into single-bed private rooms, two, three and four-bed wards. Some of the private rooms have private toilets and clothes closets. The rear wing contains the dining rooms for nurses, men servants, interns, and visitors; also the service room, which is 17 by 17½ feet, unusually liberal dimensions. These dimensions hold for all of the remaining stories.

Each story has a sterilizing room with slop sink, a sink supplied with hot and cold sterilized water, utensil and instrument sterilizers; also nurses' dressing room with lockers, dresser and toilet fixtures. There is a small room for soiled clothes, with opening to glass-lined steel clothes chute. An alcove in the corridor is arranged for the floor nurse's station, with a desk, also medicine case and sink. In this, as in all other stories, the elevators and stairs are enclosed in halls.

The second floor of the main building is on the same level as the second floor of the power house, in which the laundry and linen rooms are located, and the two are connected by a covered bridge.

The third story corridor is connected with the roof of the power building by an open bridge, so that the roof may be used as a roof garden by the patients. The whole of the third story is subdivided into private rooms, one and two-bed

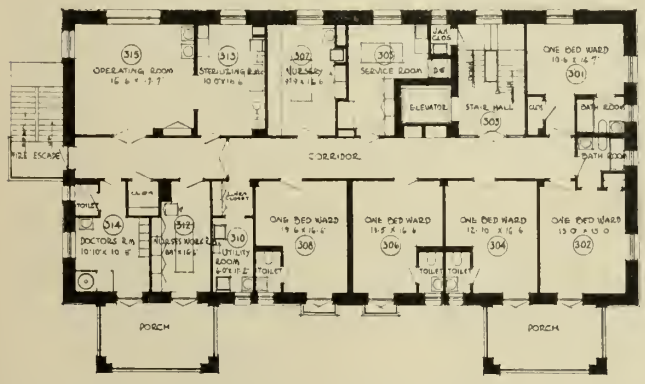


Fig. 11. Chicago Lying-in Hospital. Mothers' Aid Pavilion, third floor plan.

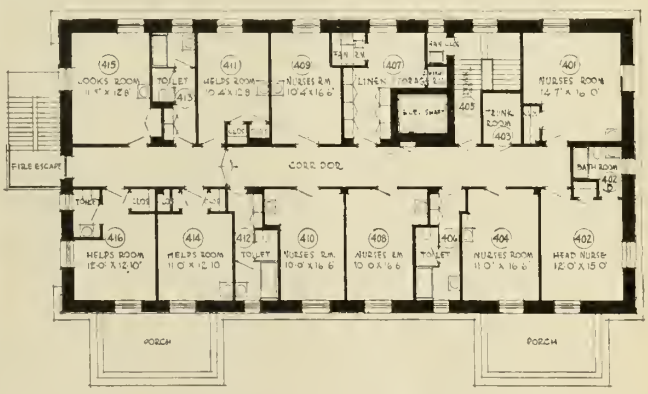


Fig. 12. Chicago Lying-in Hospital. Mothers' Aid Pavilion, fourth floor plan.

wards, with a nursery, joining which there is a laboratory and refrigerator for milk and one for flowers.

The fourth and fifth stories are, in general, similar to the third, divided to accommodate from one to four beds.

The sixth story contains the assistant superintendent's, the night superintendent's, head intern's and resident interns' rooms; the birth and operating rooms, doctors' dressing and rest room; a small amphitheater clinic of twenty-three seats, and a students' room. The plans illustrate the subdivision of these sections into several rooms or spaces.

The seventh story consists of a roof house, measuring about 45 feet by 80 feet, to which one elevator will run; an open solarium, a glazed solarium, a nurses' lecture room, a library, a manikin room, a fan room, a water sterilizing room, an x-ray room and a developing room.

The building is of fireproof construction. Window frames and doors will be the only portions or parts of the building which will be of wood. The floors of the wards will be smooth Portland cement with battleship linoleum cemented to it solidly. The door frames will be of moulded drawn steel; plinths of doors and baseboards of terrazzo.

Floors of all bath rooms, toilet rooms, kitchens, serving room and all rooms where there are plumbing fixtures, are of terrazzo. The floors in the birth rooms, operating room and clinic room are of gray flint tile, and in the lobby and vestibule are of compressed cement.

The doors generally will be of birch, stained in imitation of mahogany. The cabinets, such as linen dressers, china closets, etc., are of smooth steel; these, as well as the refrigerators and all of the steel trim, will be white enameled.

All pieces of furniture will be built into the wall, so that there will be no projecting ledges. Each of the floor pantries will be a complete unit containing steam table, gas plates, refrigerating boxes, kitchen sinks and dish closets, and will be connected to the kitchen by dumbwaiter and telephone service.

The buildings will be fully equipped with blanket warmers, screens, mechanical ventilation for kitchens, laboratories, utility rooms, sink rooms, toilet and bath rooms.

Special attention has been given to reducing to the minimum the noise caused by moving machinery, by placing elevator machines and other motors on thick hardwood frames set on thick cork, and one-inch thick felt pads under the full area of the wood frames, and by placing these machines on heavy, solid foundations in the least objectionable places in the building.

All of the buildings will have a drinking water system, in which the drinking water will be mechanically cooled and filtered in the power house and kept in constant circulation by electric pumps. The system will be connected with drinking fountains distributed throughout the buildings.

A complete water-sterilizing apparatus will be installed in the basement of the main building. From this apparatus a system of tin-lined, galvanized iron pipes will be installed for conveying sterile water to the various sterilizers in the several buildings, in which the water will be re-sterilized and from there connected to each plumbing fixture in all of the operating and birth rooms, and also to many other rooms.

Water for direct surgical uses will be re-sterilized on the seventh floor directly over the operating and birth rooms and piped to distributing fountains in accessible locations. The pipes will be sterilized by flushing with hot water under pressure; giving a temperature of about 240 degrees F.

The soiled linen chute in the main building will be glass-lined steel, three feet in diameter, with ventilation, skylight and flushing ring at the top and waste trap at the bottom.

The illuminating fixtures will be in accordance with the indirect system.

The isolation building is built in accordance with similar specifications and contains a push-button electric elevator, push-button electric dumbwaiter, mattress sterilizer, laundry and machinery, complete equipment of kitchen, laboratory and sterilizing rooms.

A master clock in the main building, when it is completed, will operate all of the secondary clocks in all of the buildings, including those in the laundry rooms, engine and boiler rooms.

An ornamental iron and brick fence will surround the group of buildings.

New Health Periodical Appears

The New York Board of Health recently began the issue of a monthly periodical under the general title *Chronicle*. It is edited by Dr. Charles F. Bolduan, director of the Bureau of Public Health Education. One column is reserved for local news of the special section of the city which it is designed to interest; the remainder of its four pages are devoted to useful and interesting advice on health and hygiene. The leading article of the first issue, "On the Water Wagon," abounds in popular slang of the day and is sure to make more of an impression on many of its readers than if written in a more dignified style. Advice is given to write direct to the department or appeal to the local free dispensary in any emergency.

The hospital is the only proper college in which to rear a true disciple of Aesculapius.—*Abernethy.*

THE ORGANIZATION OF THE NEW YORK STATE HOSPITALS

With Special Reference to Executive and Business Management

By ARTHUR W. HURD, M. D., Superintendent Buffalo State Hospital

THE execution of the laws relating to the care, the custody and treatment of the insane, the general direction of the state hospitals, and the control of all their property and expenditures, are vested, in New York, in the State Hospital Commission, a body provided for in the constitution of the state and consisting of three members, one a physician, one a lawyer, and one a lay citizen. The physician is paid $7,500 a year, the others $5,000 a year each, and all have $1,200 added in lieu of traveling expenses.

Each institution has, next in authority, a board of managers, consisting of seven persons, two of whom are women, all unpaid. They have the direct supervision of the hospital and all its affairs, and have the power of visitation and recommendation, but not the power of purchasing supplies or expending money. Formerly they had such power to make purchases, and expend money, when the institutions received funds from counties for the care of patients. But, since the State Care Act went into effect, all funds are supplied by the state and are distributed under the direction of the State Hospital Commission, the managers having no power in the matter. The managers, however, constitute a body of great importance, as they live in the same district as the hospital and are people of prominence and influence. While the power of selection of the superintendent of the hospital does not now rest with them, they still have the right to reject the nominee presented by the State Hospital Commission, and they have not hesitated so to do. They serve without pay, but are allowed expenses. They receive from the superintendent, at each monthly meeting, a report "showing the changes in population, health of patients, officers and employees, accidents, suicides, unusual sickness, infectious diseases, important occurrences relating to the welfare of the patients and to the management and discipline of the employees, and such other matters as the board may specify." They are required to make an effective inspection of the hospital at least once a month, making written reports to the Governor and to the State Hospital Commission within ten days after each inspection; also a general report of their visits, inspections and suggestions for the future is made yearly.

The officer directly in charge of the institution

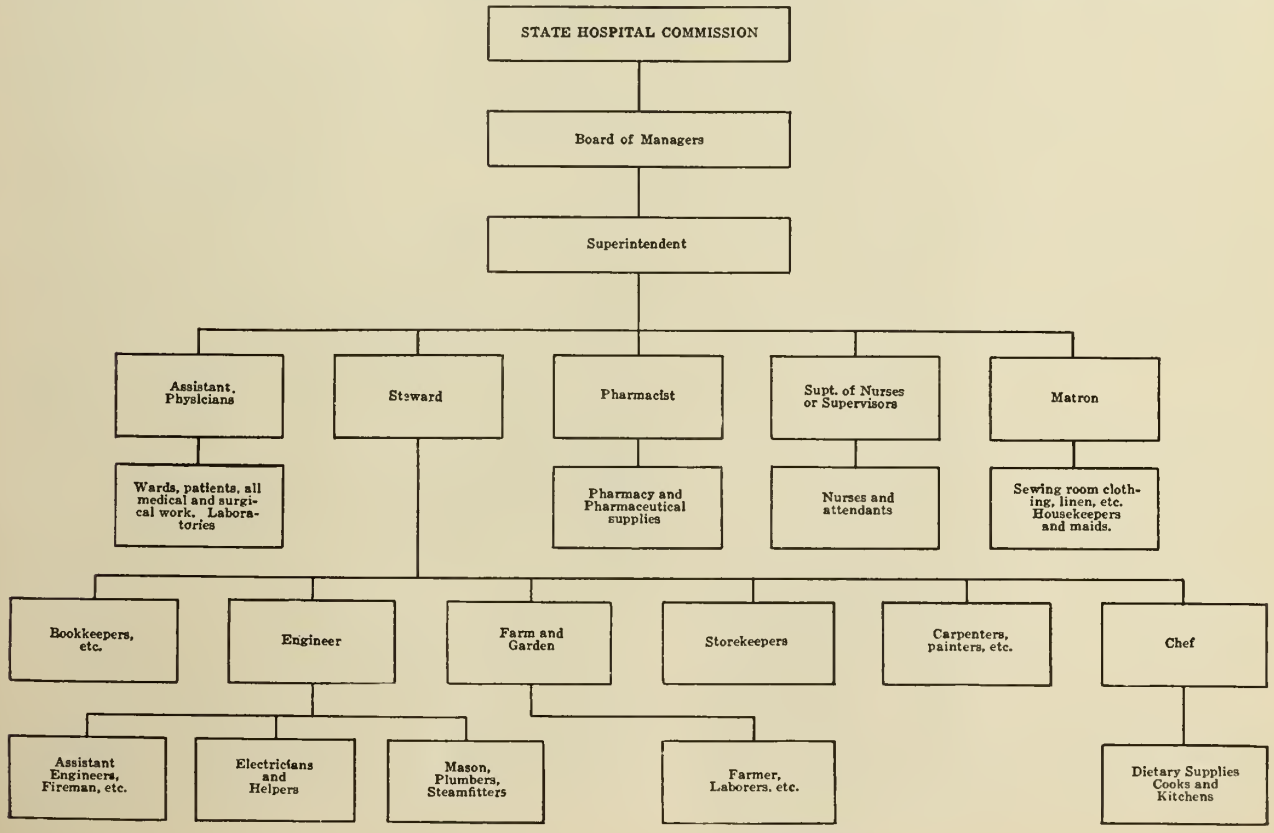


Fig. 1. Organization plan of New York State Hospital.

is the superintendent, who must be a physician of at least five years' actual experience in an institution caring for the insane. He is, by law, directed to be its chief executive officer, and in his absence or sickness the first assistant, or other officer designated by the superintendent, performs his duties. The superintendent has general superintendence of the entire institution and all departments report to him as the one in control. In him rests the appointment of such resident medical officers, including the women physicians, as may be necessary for the institution, and also all employees. He prescribes their duties and has the power, after a hearing, to discharge any employee, in his discretion. Under his direction are the medical officers, the superintendent of nurses, the nurses and attendants engaged in the care of patients, and the matron; also the steward, upon whom devolves the care of the material interests of the institution, the purchase of supplies, the conduct of the farm, grounds and the supervision of the engine rooms, boiler rooms, kitchens, store rooms, and laundry. It also devolves upon the steward to keep in daily touch with the storekeepers, the farmer, the chief engineer, the chef, and those in the kitchen.

The chief engineer has under his direct supervision his entire department, consisting of the engine room, heating apparatus, water supply, lighting, etc. In most institutions the chief electrician, with his assistants, is also in the department of and subordinate to the chief engineer.

The chef is responsible for the proper conduct of the kitchen. He arranges the daily dietary and makes requisitions for food supplies. He is responsible for proper cooking and the management of cooks, assistant cooks, and helpers. He, like the managers of other outside departments, reports directly to the steward, who in turn, when necessary, reports to the superintendent.

For the purchase of supplies the State Hospital Commission has established a central purchasing bureau, whose offices are located in the Capitol building in Albany, and this bureau has as its executive officer a trained secretary. The bureau which he serves consists of two stewards and three superintendents, who meet at intervals often enough to guide and direct his work, and to open bids for supplies. The purchase of perishable foods is left to the different stewards, as these articles cannot well be purchased in bulk or stored for any length of time. The central purchasing bureau advertises for and receives bids for the entire state hospital service for such items as meat, coal, flour, cereals, salt fish, evaporated fruits, dry goods, etc.

Once in three months each steward causes estimates to be prepared showing the kind, quantity and price of all the articles which he thinks the hospital will need during the following three months. These estimates are prepared in triplicate, one for the State Hospital Commission, another for the State Comptroller, and a third to be retained by the hospital.

The estimates cover: 1, salaries of officers; 2, wages of employees; 3, provisions; 4, general supplies; 5, farm and garden; 6, clothing; 7, furniture and furnishings; 8, transportation of patients; 9, fuel and light; 10, ordinary repairs; 11, medical supplies; 12, miscellaneous; 13, lawns, roads and grounds.

These estimates are sent to the State Hospital Commission, where they are scrutinized by a highly trained expert in prices, goods, quality, etc., who revises and may even cut out entirely

Form 1151 Jan. 1914

STATE OF NEW YORK—STATE HOSPITAL COMMISSION

STATE HOSPITAL

ESTIMATE NO 10

For Oct.- Nov-Dec. *191 4*

(Two Parts. Part I) ORDINARY REPAIRS AND SHOPS (Sec. 2, Chap. 214, Laws of 1913)

191

I do hereby certify that I have prepared the following estimate in triplicate for submission to the Commission.

Superintendent

STATE OF NEW YORK—STATE HOSPITAL COMMISSION

I hereby certify that I have carefully examined the annexed estimate as to quantity, quality and estimated cost thereof.

Auditor

I hereby certify that the Commission has carefully examined the annexed estimates, (as revised herewith), and that the amounts appearing thereon are required for the use of this hospital.

Estimated $ Allowed $

Secretary

Dated

	Repairs to Buildings.	Amt.	Price	Total
1.	Mavle, matched No.1 Clear and Dry 1 1-8 x 2 1-2 "	300 ft.	55.00 per M	$16.50
2.	Maple,matched No.1,Clear and Dry 7-8 x 2 1-4 " Items 1 and 2 repairs to floors on wards Main & Elmwood Bldg.	200 ft.	55.00	$11.00
3.	Oak No.1,Clear & Dry 1 3-4 x 12 - 12 & 16'	600 ft.	85.00	$51.00
4.	Carriage Bolts 5-16" - 2 1-2" long,	300	.40	1.20
5.	Do. 1-40 - 2 1-2" long. Items 3 to 5 repairs to steps rear of Ward 16 and Ward 2.	100		.30
6.	White Pine No.—Dressing 7-8 x 6 to 16 '	100 ft.	55.00	5.50
7.	White Pine - Matched 7-8 x 3' - 12' long	450 ft.	58.00	26.10
				$ 111. 60

Fig. 2. Estimate form for repairs and shop materials.

certain items. In food supplies there is a ration allowance for all institutions on the same basis, the ration allowance being multiplied by the number of patients to arrive at the gross amount required. By reason of his knowledge of prices, the state of the markets, etc., some items may be changed by the auditor and such revisions may thus be made to the financial advantage of the hospital.

For the guidance of the purchasing committee a form is prepared, showing the amount that will be allowed by the Commission on the quarterly estimates, in order that the committee may early advertise for bids in making up contracts in large quantities. In the estimates every item has an item number, and every estimate also a number. Purchases against such items as are allowed are referred to by item number and estimate number in the vouchers. The item with number, etc., is checked up by the State Hospital Commission and also by the State Comptroller. This, with the checking of the bills and items, when prepared at the hospital, subjects the bills to the scrutiny of three officials and reduces the chances of error.

The superintendent, assistant physicians, superintendent of nurses and supervisors all give instruction in the training school for nurses.

The pharmacist has charge of the pharmacy and its contents, and prepares the prescriptions and sees that they are safely delivered into the hands of the nurses for the wards. He keeps an account of the supplies of the pharmacy and prepares estimate No. 11 for medical supplies for the steward.

All supplies are received by the storekeeper without bills or memoranda, making it necessary for him to make a complete record of all receipts each day, which record is sent to the steward's office, and against which all dealers' bills are checked. All supplies desired by different departments are made out on requisition blanks by the head of the department, brought to the steward for approval, and later submitted to the superintendent again for his approval before the requisition goes to the storekeeper. The storekeeper fills the order, taking a receipt therefor from the employee to whom it was distributed, and a permanent record of the transaction is thus kept. Supplies raised upon the hospital's garden, farm, etc., are likewise accounted for and their value estimated in the regular way and charged to the hospital maintenance account, and thus an accurate record, for purposes of comparison, is maintained. Otherwise hospitals of large farm or garden acreage would have much advantage over urban institutions, most of whose supplies have to be bought for cash.

The organization of the State Hospital keeps everything under one head, namely, the superintendent. He in turn is held responsible by the two bodies above him, namely, the State Hospital Commission and the managers, and he holds to strict responsibility all the numerous departments under him and is given authority commensurate therewith. Graphically illustrated, the organization is somewhat as shown in Fig. 1 (consulting physicians, surgeons, ophthalmologist, dentist, etc., not being given, as they are not usually resident officers).

The above table is a reprint from the annual Hand Book, published by the State Hospital Commission, which shows the comparative expenditures of five large hospitals in each of the departments covered by the different estimates, so that it can readily be seen in what respects some hospitals are spending more or less than others, and where there may be faults, if any, which need correction.

Fig. 2 is a page from one of the estimates, No. 10, for ordinary repairs and material for shops, which is sent to the State Hospital Commission for approval or revision.

COMPARATIVE STATEMENT OF TOTAL AND PER CAPITA COST OF MAINTENANCE OF PATIENTS IN STATE HOSPITALS FOR THE YEAR ENDING SEPTEMBER 30, 1912.

The per capita cost is determined by dividing the total actual cost by the average daily population excluding paroles.

	Utica, 1,506 patients.		Willard, 2,344 patients.		Hudson River, 3,029 patients.		Middletown, 2,001 patients.		Buffalo, 1,954 patients.	
	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.
Officers' Salaries	$ 16,896.92	$ 11.22	$ 20,794.66	$ 8.87	$ 29,326.37	$ 9.68	$ 19,678.14	$ 9.83	$ 19,613.64	$ 10.04
Wages	113,831.18	75.59	183,830.27	78.43	213,620.75	70.53	139,635.63	69.78	133,655.56	68.40
Provisions	84,541.68	56.13	134,462.86	57.37	197,113.21	65.08	135,590.40	67.76	134,960.74	69.07
Stores	5,396.49	3.59	6,689.88	2.86	13,620.34	4.50	8,624.30	4.31	6,905.39	3.53
Commutations	8,386.98	5.56	6,313.31	2.69	11,834.10	3.91	6,053.75	3.03	9,092.35	4.65
Ordinary Repairs	5,332.07	3.55	14,007.15	5.98	23,079.25	7.62	6,633.38	3.32	10,542.96	5.40
Farm and Grounds	14,082.93	9.35	18,900.51	8.07	25,698.16	8.48	5,527.21	2.77	2,180.16	1.12
Clothing	8,583.83	5.69	17,990.67	7.67	17,870.10	5.90	9,167.09	4.58	12,523.18	6.41
Furniture and Bedding	8,997.58	5.98	14,181.42	6.05	15,275.33	5.04	6,769.91	3.39	12,671.07	6.49
Books and Stationery	1,886.15	1.25	2,065.43	.88	4,164.88	1.37	1,881.56	.95	2,251.08	1.15
Fuel and Light*	28,495.47	18.92	37,431.18	15.97	105,480.25	34.82	32,115.43	16.05	29,575.09	15.14
Medical Supplies	1,711.90	1.14	1,926.23	.82	5,021.62	1.66	2,089.34	1.04	2,354.57	1.20
Miscellaneous Expenses	6,751.91	4.48	9,595.61	4.09	13,274.40	4.38	6,506.47	3.22	7,387.90	3.78
Transportation	2,307.25	1.53	2,463.93	1.05	5,062.27	1.67	1,043.03	.53	639.33	.32
Total	$307,202.34	$203.98	$470,653.11	$200.80	$680,441.03	$224.16	$381,315.64	$190.56	$384,353.02	$196.70

*Hudson River State Hospital reports that coal valued at about $23,000, included in this amount, was consumed previous to October 1, 1911.

Fig. 1. Park Hospital, Mason City, Iowa.

SMALL COMMUNITY HOSPITAL BUILT AND CONDUCTED BY PHYSICIANS

Park Hospital of Mason City, Iowa, Contains Offices of Medical Staff, Whose Members Do Team Work in Diagnosis, Treatment and in Directing Administration

By F. G. MURPHY, M. D.

ABOUT six years ago six physicians of Mason City, Iowa, appreciating that an up-to-date hospital was needed for the benefit of the public, and that they themselves might do more efficient work, conceived the idea of uniting a hospital and office building in one, thereby solving the usual economic problem of hospital deficits and at the same time bring the physician in closer touch with his patient.

At first a building was rented, the first floor of which was used for physicians' offices and the floor above for the accommodation of patients. This plan worked so satisfactorily for all concerned that in less than two years plans were accepted for the new fireproof structure we now occupy.

Our hospital is unique in several respects. The staff owns a majority of the stock in the hospital, the rest of the stock being held by physicians in the surrounding towns and by business men in Mason City. The board of directors is composed of the hospital staff, which gives the institution the distinction of being managed in every respect by medical men.

Superintendents of experience and high efficiency enjoy working for a managing board composed of medical men who alone are in a position to judge of their efficiency, and appreciate not being hampered in their work by a sectarian or non-medical board of directors who usually know little about the proper management of an asylum for the sick and suffering.

While the hospital is non-sectarian, clergymen of all denominations are welcomed and encouraged to visit the sick, which they enjoy doing.

The training school for nurses is in direct charge of Miss Anna L. Davis, formerly of St. Luke's Hospital, St. Louis, who is assisted by Miss Isabel White from the Massachusetts General Hospital. They have the enthusiastic support of the medical directors, who are in a position to appreciate efficiency in the hospital management. The training school has a high standard, following the three years' course prescribed by the State Board of Examiners.

Our hospital organization has been in existence over six years and its success has been beyond our expectations. We had not worked long before we realized that our success depended upon the harmony existing in the organization. We soon learned that team work brought success to

Fig. 2. Park Hospital, Mason City, Iowa. Sun parlor, third floor.

us individually as well as to the hospital. We soon had a reputation as the progressive physicians of the community. The industrial plants and some of the railways began sending their injured to the Park Hospital because a competent surgeon was always on hand as soon as the ambulance arrived at the hospital. The injured received the best of care, which lessened the probability of damage suits against the companies by whom they were employed; consequently the hospital became popular with both the employees and the officers of the various organizations.

For another reason the hospital receives the commendation of the community: not a dollar was donated in its construction or maintenance. By proper management the hospital has been self-supporting and last year declared a good dividend.

The success of the organization is to some extent due to the fact that the members of the hospital staff have their offices in the building. This is convenient and facilitates team work. Each member of the staff is either limiting his practice to some branch of medicine or specializing while yet in general practice. For instance, Dr. Graham

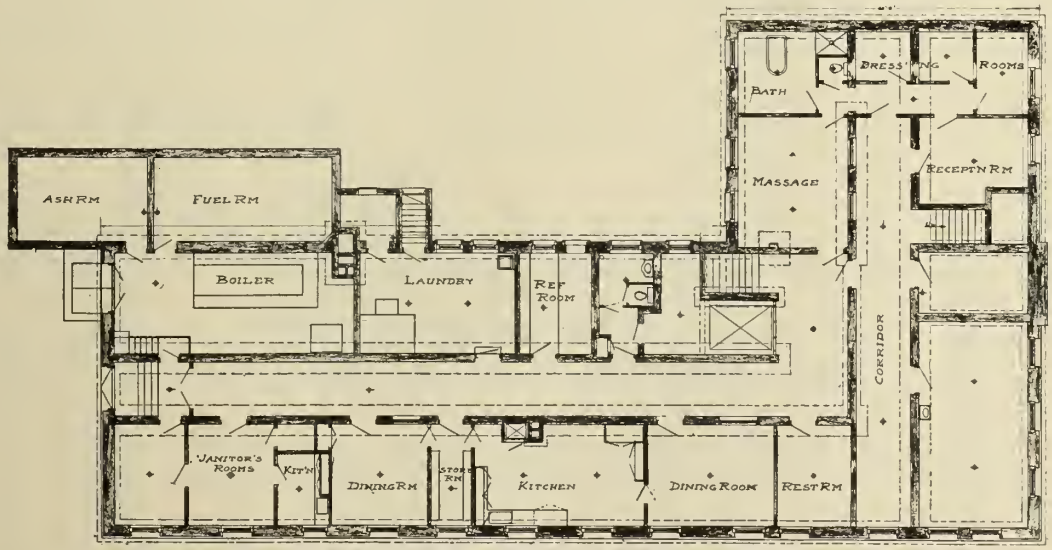


Fig. 3. Park Hospital, Mason City, Iowa. Basement plan.

limits his practice to surgery and consultations. Drs. Starr and Fitzpatrick assist Dr. Graham in surgery and for the present continue their general practice. This gives us a surgical team which leaves a competent surgeon in charge during the absence of any of them. Dr. Murphy limits his practice to diseases of the eye, ear, nose, and throat. Dr. Long specializes in anesthetics and Dr. Newcomer in internal medicine, while both do a general practice. Dr. Echternacht limits his practice to clinical diagnosis; he operates the x-ray laboratory departments.

Fig. 4. Park Hospital, Mason City, Iowa. A charting room.

The aim of the staff is to keep the institution from becoming one-sided and to see that no department is neglected. It is the desire of the physicians in the hospital to do as much research work as possible, which cannot be carried on satisfactorily if, for instance, the medical department is neglected for the surgical.

It is the spirit of the physicians of the staff that makes team work possible. With this spirit existing it did not take long to demonstrate that it was to the advantage of every one that the physicians should work in harmony.

The staff has learned also to appreciate the importance of competent heads for the different departments. The chief clerk keeps a complete record of all the expenditures, collections and accounts with the hospital. The engineer is an electrician, carpenter and also a plumber, and looks after the repairs of the building with no additional expense. He also keeps the automatic elevator in perfect running condition. The staff has divided itself into committees: one member confers with the assistant superintendent in the purchases made for the kitchen; another assists the engineer in purchasing the coal; another confers with the superintendent in purchasing hospital supplies, and acts as adviser to the chief clerk; and another confers with the superintendents in the training school departments and in miscellaneous matters pertaining to the hospital.

This system of team work and division of responsibility in the hospital management has worked admirably, for by means of it the loss of an employee, no matter how competent, does not jeopardize the life of the hospital. Two members of the original staff have died within the last four years. With serious illness to some of its members and death to others, the hospital has had its tragedies, but the organization is such that the efficiency of the institution can be only temporarily impaired by these misfortunes.

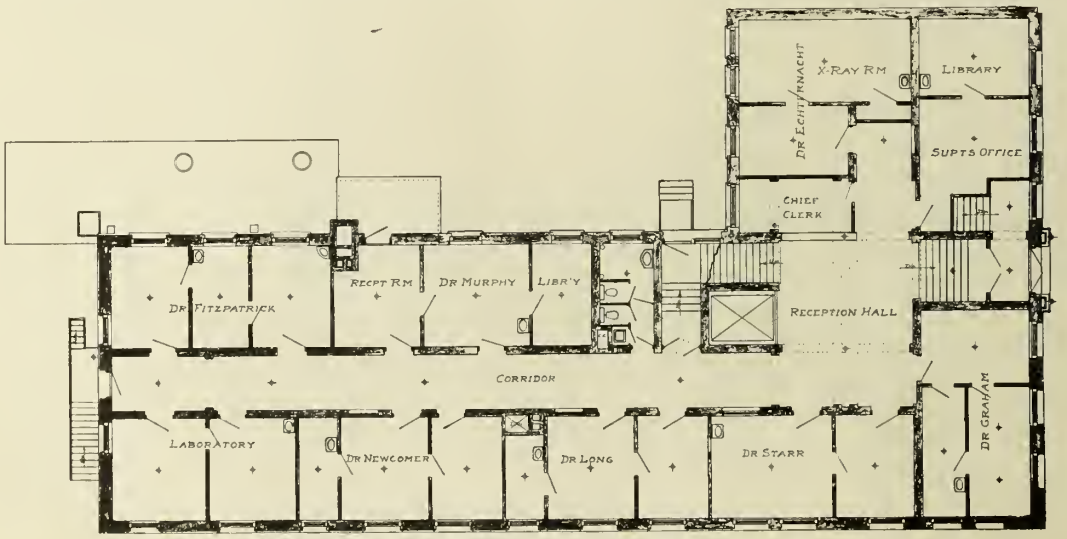


Fig. 5. Park Hospital, Mason City, Iowa. First floor plan.

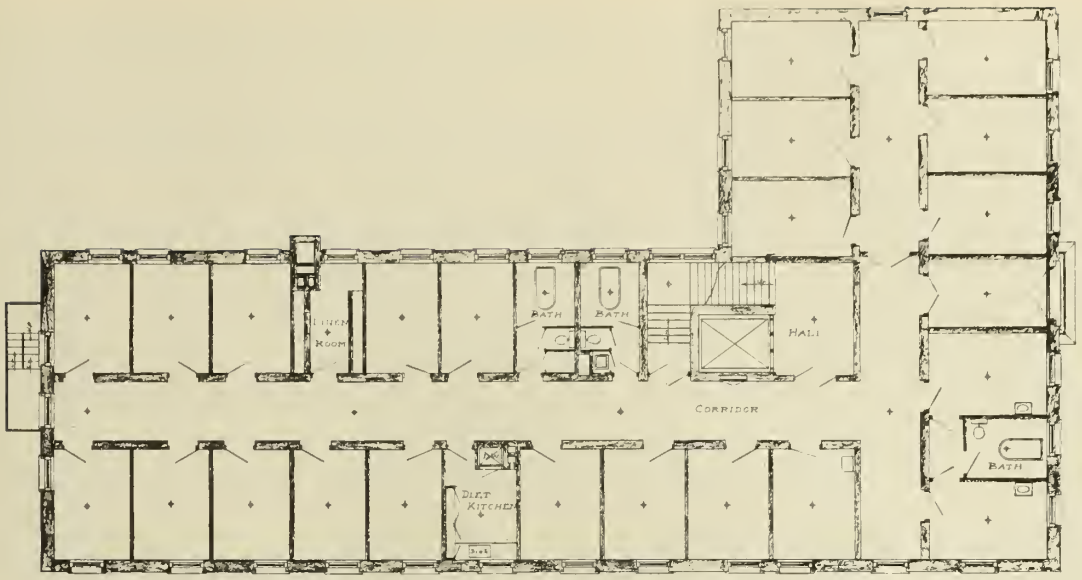


Fig. 6. Park Hospital, Mason City, Iowa. Second floor plan.

The hospital board, which is composed of the hospital staff, meets on the first Tuesday of every month to receive reports from the different departments, including that of the chief clerk, concerning the receipts and expenditures of the previous month.

The public demands service of the hospital as well as of the medical profession, and the medical man's service to the public is impaired when his patient is being cared for in a hospital managed by a board which is not educated in the care of the sick.

The members of the staff do the charity work that all physicians are called upon to do in their communities, though it is not necessary for the hospital to donate its services to the poor, as that burden is borne by the counties, in which every individual contributes according to his worth.

The hospital as well as the medical profession renders the public the best of services and is in no sense a burden. No donations are asked or received. It is evident to us that a hospital can be made self-supporting without donations from organizations or individuals.

However, as an appreciation of the services rendered the public in the construction of a modern hospital of which the community was much in need, the Masonic Orders, Eastern Star, Elks, Eagles, B. of R. T., Episcopalians, Presbyterians, and Mrs. Fred Keeler each volunteered to furnish a room, making eight handsomely equipped rooms. This assistance in equipping the hospital was of much benefit, and the public spirit which prompted the voluntary offerings was much appreciated by those of us who were vitally interested in the success of the institution.

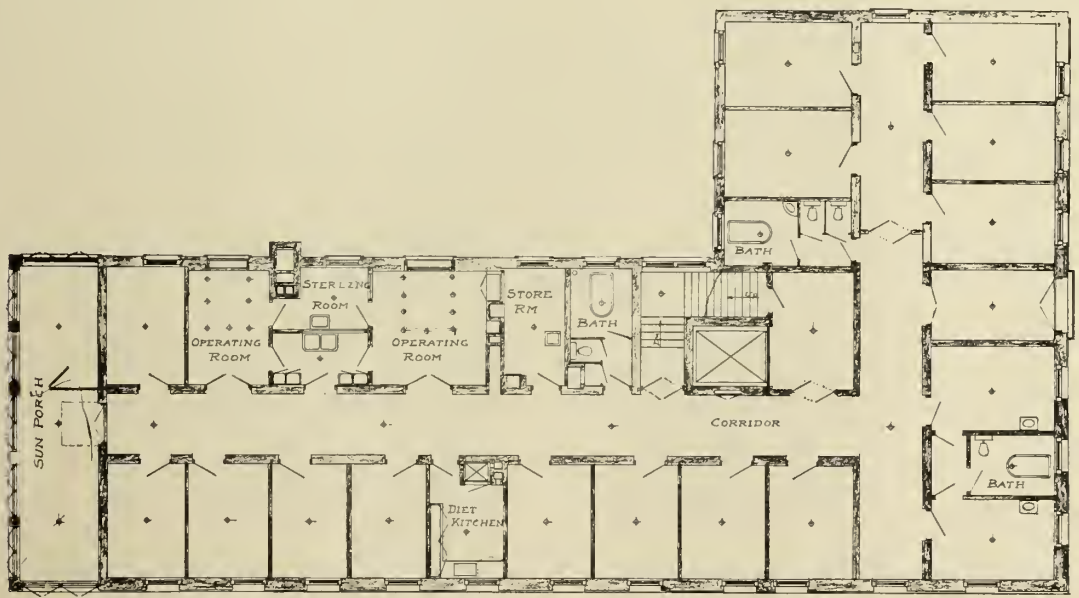


Fig. 7. Park Hospital, Mason City, Iowa. Third floor plan.

ELECTRIC HEAT FOR COOKING IN A STATE HOSPITAL

New Complete Installation for the Main Kitchen in the Southern Indiana Hospital for the Insane—Overhead Charges Negligible, Making the Plant Commercially Economical

By CHARLES E. LAUGHLIN, M. D., Medical Superintendent

A LITTLE over two years ago, at which time the new psychopathic hospital of the institution was opened, we began our first experience with electric cooking equipment. The equipment installed is shown in Fig. 1. This department has a

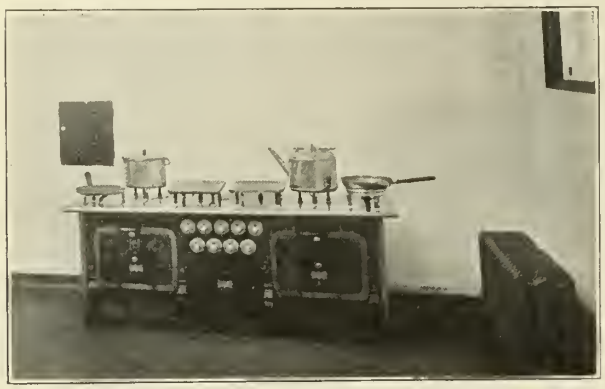


Fig. 1. Section of kitchen in the psychopathic hospital of the Southern Indiana Hospital for the Insane.

capacity of 60 patients, and, although the range appears small, it has been ample for all requirements.

Experience in the use of this equipment proved so entirely satisfactory that it was determined to adopt a similar method in the general kitchen of the institution, which was installed in September of the current year. This range, shown in Fig. 2, was built on specifications to suit our requirements. It is 6 feet wide by 12 feet long, accessible from all sides, making a total of 36 feet of working length. There are three ovens on either side, the dimensions of which are 24 inches wide, 27 inches deep, and 16 inches high. Each of these ovens has a capacity for roasting 24 chickens or 80 pounds of beef. On top of the oven there are mounted seven frying griddles, 18x24 inches. These griddles have a rim on the outside about ½ inch deep, and are used for broiling steaks and all classes of frying, such as fish, eggs, bacon, potatoes, etc. On the opposite side of the range are ten disk stoves, ranging from 8 to 15 inches in diameter. These are used for boiling purposes other than that done in the large steam cookers. The griddles and the disk heaters are largely interchangeable in their use, and the latter may be used for griddle cakes, toast, etc., while the griddles can be used for cooking. Each griddle, disk, and oven has its own three-heat snap switch, which provides three degrees of heat, and each switch is provided with pilot light which shows whether the heat is turned on.

The range is supplemented with a five-shelf electric oven, which is shown in back of the range in Fig. 2. This oven is provided with an accurate mercury thermometer, and has 26 square feet of baking surface, equivalent to 90 1-pound loaves of bread. It is used for pastries, and is entirely satisfactory for all forms of baking and roasting. Owing to the exact control and evenness of the heat, this oven will do at least 50 percent more work than the ordinary portable gas or coal oven.

The greatest advantage of the electric cooking is the sureness of the results obtained. If an operation is performed at a certain time today, exactly the same results can be obtained at a later time under the same conditions. This advantage is most vitally brought out in the pastry oven, where the material is uniform. For example, the pastry chef knows that with his oven at 425 degrees it takes twenty minutes to bake pies, at the end of which time they are properly browned and exactly done. There is no guessing; all the operator is required to do is to see that the temperature is proper and leave the material in the oven the necessary length of time. In the case of the pastry oven it is also desirable to secure either high or low temperatures to give the best results for various classes of work, and with the electric oven this change in temperature may be had quickly by either increasing or reducing the current. In the range baking ovens, which are used mostly for meats, shrinkage is less than with either coal or gas cooking. This, of course, is a vital point and one which must be considered when figuring the comparative cost of operation of electric equipment and gas or coal. In the electric equipment the floor space occupied is considerably less than for a gas equipment of the same capacity, and less also than the space required for coal equipment. Moreover, no building space is taken up by chimney and flues, or for storing fuel, so that the electric equipment can be located according to convenience of use without reference to chimney connections. There is a decided saving in labor in comparing the electric equipment with coal, in which coal and ashes must be handled, as well as cleaning up the dust and soot incident to their use. Elimination of poisonous, gaseous products of combustion keeps

Fig. 2. General kitchen in the Southern Indiana Hospital for the Insane, showing electric range and electric oven. Note ranges back to back.

the kitchen perfectly sanitary, and, as the heat is generated only where it is needed, the room temperature is far more comfortable. Summing up the condition under which the operator works, it is as nearly ideal as possible.

While the first cost of electric equipment properly built—and, of course, this is the only thing that should be considered for an institution—is slightly higher than a coal or gas range, the installation charge is less, and the cost of maintenance is far less with the electric than with coal or gas. The life of the electric equipment is far greater also, as the heat is generated only where it is used, and these parts can be replaced.

As to the cost of operation, the amount of electrical energy consumed each day is between 175 and 225 kilowatt hours per day, or an average of 200. This is equivalent to one-quarter of a kilowatt hour per day per person. Our cost per kilowatt, figuring with a liberal margin of allowance, which we are sure is not too low, is 2½ cents per kilowatt hour, or a little over ½ cent a day per person. The current used by the electric range should not be charged, however, at 2½ cents per kilowatt, as the only additional expense we are under for generating this current is the coal consumed. Figuring this way, of course, the actual cost of the extra electricity generated for the electric range is not more than 1 cent a kilowatt hour, or about ¼ cent per day per person in addition to our expense for electricity before the range was installed. Our cost of cooking per person is, therefore, very much less with the electricity than with coal previously employed through the elimination of attendance, and, as mentioned above, the shrinkage favors the electric, and without question the quality of the cooking is far in advance.

As an index to the capacity of the range, it may be stated that each week since it has been installed it has been taxed with and readily performed all of our requirements, including a fried chicken dinner for 900 people. The electric kitchen equipment represents about as great an advancement over the wood or coal range as did the latter over the more primitive fireplace and crane.

PHYSICIANS' HOSPITAL AT THIEF RIVER FALLS, MINN.

Group of Medical Men to Build and Operate Modern Institution for Care of Their Patients

The hospital being erected at Thief River Falls, Minn., by a corporation composed of local physicians, is to be a two-story structure, 30x62, with full basement. Joseph C. Lutz, of Thief River Falls, is the architect. The exterior of the building will be finished with a rough coat of moss-green rat-tail stucco, and all trimmings will be snow-white. The front porch will be so arranged that it can be screened or inclosed with glass. In the basement will be three chambers for the employees of the hospital, a dining room, kitchen, large pantry, boiler room, laundry and toilet room. In the sub-basement will be a 10,000-barrel cistern. The entire basement will be plastered and the woodwork will be given a natural pine finish. On the first floor will be four single chambers, three double chambers, one ward, bath room, diet kitchen and a general office and waiting room. The second floor will have four single chambers, one double chamber, two wards, operating room, physicians' dressing room, bath room, diet kitchen and a sterilizing room. There will be large halls in the center of the first and second floors, running the entire length of the building, and at the ends of these halls will be the linen closets. Drs. H. W. Froehlic, J. E. Douglas, O. F. Mellby, F. H. Gambell and H. G. Heiber are interested in the undertaking. The institution will be known as the Physicians' Hospital.

THE CHEMISTRY AND PHYSIOLOGY OF BREAD, BISCUITS AND CRACKERS[1]

Most Important Articles of Human Food Have Been Subject to Great Evolution in Manufacture—Leavened and Unleavened Bread—Brown, Graham and Whole Wheat—Patent, Straight, Clear and Low-Grade Flour—Some Analyses of Breads and Crackers

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THE importance of bread in the human dietary is questioned by no one. It is probably the most universally used of all foods, and its withdrawal from the diet brings about irksome conditions recognized by the physician as well as the patient. Notwithstanding the universality of its use, its composition is extremely variable, and much popular confusion exists as to the true significance of the nomenclature used by the trade. The real meaning of "brown bread," "graham bread," and "whole wheat bread," while possibly clear to the trade, is by no means obvious to the consumer, especially in view of the diverse standards adopted by different manufacturers.

In the broadest sense breads may be grouped in two classes, leavened and unleavened. The latter finds its chief use in certain religious feasts, or in the various kinds of corn bread, such as Johnnie cake, hoe cake, etc.; most of the biscuits, crackers and wafers are forms of unleavened bread, containing minimum amounts of moisture. The bread usually found on our tables, the real "staff of life" is of the leavened variety. This may either be in the form of the ordinary bread which is eaten cold and generally in from one to two days after baking, or as biscuits or rolls which are consumed while still hot.

In the early days of bread making the flour was simply mixed with water and baked; types of this sort of bread are pilot bread, ship's biscuit and certain other forms of biscuits and crackers. The next step was the use of a sour fermenting dough, a method not widely used at the present time, although the well-known pumpernickel is still made by this process. A later development was the use of brewer's yeast, but this has been supplanted to a considerable degree, especially in the home, by compressed yeast because of the ease and convenience of handling the latter. The use of any yeast naturally gives rise to the presence of small amounts of alcohol in the finished product. Bolas found from 0.22 to 0.40 percent of alcohol in new bread, or about 16 grains per average loaf. Forty two-pound loaves would contain on the average about as much alcohol as a bottle of ordinary port, so that the danger of alcoholic stimulation from the eating of bread is indeed remote. The next advance in bread manufacture was "aerated," or "luft" bread, which is made by kneading the flour under pressure with water highly charged with carbonic acid gas or air, which, upon the removal of the pressure, expands and gives porosity to the bread. Chemical agents, such as baking soda, cream of tartar and the various baking powders, are also widely used as a source of leavening, especially in home-made biscuits and rolls.

The nature of the leavening process used obviously affects the composition of the bread to some degree, but the main factors influencing the bread's composition are the kind of flour used, the amounts of sweetening or seasoning materials added, and whether milk, cream, water, butter or lard are used alone or in combination in the mixing of the dough; the method of baking also has a marked effect on the moisture content and on the relative amounts of the different carbohydrates present.

In studying any series of analyses of breads it will be observed that the chief variations in composition are found in the amounts of water and ether extract (fat). Flours rich in gluten generally produce breads quite high in water. The duration of the baking period and the temperature of the oven also have an influence on the water content of the bread, a bread baked quickly at a high temperature showing much more moisture than one baked slowly at a low temperature. As water is cheaper than flour, it is evidently to the baker's financial interest, within certain limits, to have his bread contain the maximum amount of water, and efforts have been made by various authorities to establish maximum moisture standards. One has suggested 31 percent, another 34 percent, while apparently normal breads have been found to contain as much as 44 percent.

The variations in fat depend chiefly upon the amount of milk or cream added to the dough and upon the kind and amount of fat used either in the bread itself or in greasing the pan in which it is baked. The variations in fat are also due in part to the fact that in the process of baking a portion of the fat is either destroyed or rendered non-extractable by ether. For instance, in three samples analyzed by the writer the amount of fat found was much lower than could have resulted

[1]This is one of a series of articles on Foods. Next month, "Meat Extracts."

from the use of any brand of flour, had there been no loss of fat.

The acidity of bread is an important characteristic. The flour contains but little acid in the free state, but the bread itself acquires a certain amount of acidity due to the action of the ferments present during the leavening process. Acetic acid, lactic acid and possibly other acids are commonly present, and physiologists believe that this acidity adds to the bread's palatability as well as its digestibility.

A perverted public taste, doubtless encouraged by the millers using the various bleaching processes, demands a white flour and consequently a white bread. Generally speaking, there are four main grades of flour, "patent," "straight," "clear" and "low-grade" or "red dog." The "patent" is made from the most starchy part of the wheat grain and from that containing the better quality gluten and gliadin; the "clear" is made from the glutinous portion of the grain and is that part remaining after the "patent" and "low-grade" have been separated. The "straight" is the "patent" and "clear" combined, although some millers use this term also to indicate the "clear." Naturally, the "patent" is the whitest of all the grades and for this reason commands a higher price. The proper aging of the wheat not only improves the flour for baking purposes, but also lightens its color. The main purpose of the bleaching process is to make all the grades of flour whiter, and to make the "straight" and "clear" grades as white or whiter than the unbleached "patent"; furthermore, this process in a few minutes produces a fictitious appearance of age and consequently of quality.

The objections to the bleaching of flour are therefore apparent, for whatever may be our opinion as to the harmfulness of the added poisonous ingredient, which moreover is not eliminated by baking, the process is unquestionably a fraudulent one, as it makes a commercially inferior grade of flour appear of better quality than it really is. Furthermore, undoubted authorities maintain that the bleaching injures the baking qualities of the flour and produces an inferior bread.

The demand for the excessively white, over-refined "patent" flour results in the consumer receiving a flour containing a maximum of starch and a minimum of the protein and the valuable mineral ingredients of the wheat grain. Were man to "live by bread alone" this would present a most serious situation. Fortunately, most of us, however, partake of a varied diet, and in all probability few of us suffer from a deficiency of the mineral salts in our daily ration. Nevertheless, the fact remains that the offal of the wheat mills, generally used for cattle feed, contains ingredients which might well be utilized by man to his advantage were it not for the prevalent idea that the whiteness of a flour and its nutritive value are closely associated.

White flour often has a constipating effect, and according to Graham even the ancients recognized that bread made from entire-wheat flour "was more conducive to general health and vigor and better adapted to nourish and sustain than bread made from superfine flour." Graham, who was a physician and a dietitian, recognizing the value of entire-wheat flour in all disorders of the stomach and bowels, started in 1839 a country-wide propaganda favoring a return to the use of bread made from the whole of the wheat, ground but not boiled. From that time to this unbolted wheat meal has been popularly known as "graham" flour. Such a flour to be true to name should contain all the bran, fluff, germ, protein, fat and minerals

TABLE I—SOFT BREADS.

	Water.	Ash.	Protein (Nx6.25).	Fiber.	Nitrogen-free extract.	Fat.	Calculated calories per 100 gms.
Alfalfa Bread	20.5	2.7	10.6	1.0	63.9	1.3	310
*Brown Bread (ave. of 2)	43.6	2.1	5.4		47.1	1.8	226
*Corn Bread (ave. of 5)	38.9	2.2	7.9		46.3	4.7	259
*Gluten Bread (ave. of 6)	38.2	1.3	9.3		49.8	1.4	249
Gluten Bread, Ferguson	37.2	1.7	24.2	0.2	33.6	3.1	259
Gluten Bread, Glubetic (1913)	42.2	1.4	25.8	0.1	27.8	2.7	239
Gluten Bread, Glubetic (1914)	30.1	1.1	38.8	0.4	25.5	4.1	294
†Gluten Bread, Glutosac (1906)	31.5	1.9	27.4	0.4	36.1	2.7	278
Gluten Bread, Glutosac (1915)	37.2	1.6	27.2	0.8	31.0	2.1	252
†Gluten Bread, Protosac (1906)	27.3	1.4	32.5	0.2	37.0	1.6	292
Gluten Bread, Protosac (1915)	30.7	2.1	29.8	0.4	35.2	1.8	276
*Graham (ave. of 27)	35.7	1.5	8.9	1.1	51.0	1.8	256
‡Pumpernickel (ave. of 4)	42.2	1.4	7.2	1.5	46.4	1.3	226
*Rolls, French (ave. of 2)	32.0	1.3	8.5	0.6	55.7	2.5	279
*Rolls, Plain (ave. of 5)	25.2	1.0	9.7	0.3	59.6	4.2	315
*Rolls, Vienna	31.7	1.1	8.5	0.4	56.1	2.2	278
*Rye Bread (ave. of 21)	35.7	1.5	9.0	0.5	52.7	0.6	252
*Rye Bread, whole (ave. of 2)	50.7	0.9	11.9	1.2	35.9	0.6	197
*Toasted Bread (ave. of 5)	24.0	1.7	11.5		61.2	1.6	305
*Wheat Bread, cream (ave. of 6)	33.2	1.1	9.8	0.2	54.8	0.9	267
*Wheat Bread, home-made (ave. of 38)	35.0	1.0	9.1	0.2	53.1	1.6	263
*Wheat Bread, milk (ave. of 8)	36.5	1.4	9.6		51.1	1.4	255
*Wheat Bread, Vienna (ave. of 25)	34.2	1.1	9.4	0.5	53.6	1.2	263
*Wheat Bread, whole (ave. of 12)	38.4	1.3	9.7	1.2	48.5	0.9	241
Wheat Bread, whole, Dieto	40.4	1.7	9.7	0.7	47.1	0.4	231
Wheat Bread, whole, Heinbockel's Diabeto	33.5	3.2	8.6	1.2	52.0	1.5	256
Wheat Bread, whole, Jireh	39.2	1.8	9.4	0.6	48.6	0.4	236
Wheat Bread, whole (somewhat stale)	21.8	2.5	12.4	0.6	62.0	0.7	304
*Wheat Bread, miscellaneous (ave. of 103)	35.6	1.2	9.3	0.5	52.2	1.2	257
Wheat Bread, miscellaneous, N. J. (ave. of 77)	35.8	1.1	9.3		52.5	1.3	259
Wheat Bread, miscellaneous, Conn. (ave of 201)	33.8	1.4	9.7		53.9	1.2	265

*Atwater and Bryant, U. S. Dept. Agr., Off. Exp. Stat., Bull. 28.
†Winton, Rept. Conn. Expt. Stat., 1906.
‡König, Chem. der menschl. nahr.-u. Genussmittel, 1903, I, 678.
All other analyses made in author's laboratory.

found in the wheat grain. Unfortunately, the "graham" flour of today is a very uncertain quantity. Often it is simply a mixture of low-grade flour with bran. The so-called "whole wheat" or "entire wheat" flour is a complete misnomer, for in manufacturing this product a portion of the bran is removed. It is obvious from the above that the character of the "graham" or "entire wheat" flour used will have an important effect on the resultant bread.

"Brown bread also is a vague term. It may simply mean that a certain amount of bran or germ or both has been added to the flour, or it may be applied to bread made from whole wheat meal. In New England the term has still a different meaning, being applied to a bread made from wheat or rye flour with an admixture of corn meal.

"Vienna" bread is made from "patent" flour, fermented with compressed yeast, milk often being added to the dough. The crust is given a high glaze by being subjected to the action of overheated steam before leaving the oven.

"Zwieback," from the German words meaning "twice-baked," is a name applied to slices of bread made from a rich dough, which have been heated in the oven until thoroughly dry.

Table I gives the analyses of the various kinds of soft bread. The gluten breads are in a class by themselves as regards protein content. While many brands at the present time are far from what they should be, from the standpoint of the diabetic for whom they are especially intended, their improvement in recent years is shown by a comparison of the writer's analyses and those cited in the table from Atwater and Bryant's compilation. In order to make a more attractive bread and to increase its palatability, it is a common practice among bakers to mix more or less ordinary wheat flour with gluten flour either directly or in the "sponge," thus defeating the main purpose of a true gluten bread, namely, a bread of relatively low starch content.

The average analyses of a large number of samples of wheat bread, graham bread and whole wheat bread show relatively only slight differences in composition. The graham and whole wheat breads generally show more ash and fiber than ordinary wheat bread, but in certain brands these increases are extremely small.

It is interesting to note how closely the two series of analyses of wheat bread made by the writer agree; one was made in New Jersey in 1895, the other in Connecticut in 1913. This comparison also shows that while the change in composition has been slight, the weight of the loaf has materially decreased. While in 1895 58 percent of the five-cent loaves weighed over 16 oz. and 83 percent over 15 oz., in 1913 only 7 percent weighed over 16 oz. and only 16 percent over 15 oz. The average weight of the five-cent loaf in the eighteen years shrunk from 16.4 to 14 oz.

TABLE II—HARD BREADS.

	Water.	Ash.	Protein (Nx6.25).	Fiber.	Nitrogen-free extract.	Fat.	Calculated calories per 100 gms.
Aerated or Luft Bread.							
Bischof (1907)	7.4	4.7	73.1	0.0	14.3	0.5	354
Brusson (1912)	12.7	0.8	37.3	0.3	47.1	1.8	354
Charrasse (1913)	8.1	2.1	40.8	0.2	43.5	5.3	385
Fromm's Luft Bread (1913)	8.3	8.9	50.9	0.2	30.7	1.0	335
Fromm's Uni Bread (1913)	8.1	5.6	71.7	3.5	9.4	1.7	340
Health Food No. 1, Proto Puffs (1913)	7.2	2.7	76.3	0.2	10.7	2.9	374
Health Food No. 1, Proto Puffs (1915)	8.7	2.8	72.3	0.4	13.0	2.8	366
Health Food No. 2, Proto Puffs (1913)	7.9	2.5	56.6	0.2	30.7	2.1	368
Health Food No. 2, Proto Puffs (1915)	9.2	2.6	58.8	0.4	26.9	2.1	362
Hendebert's Pain d'Alenrone (1914)	8.2	4.4	76.1	0.7	9.1	1.5	354
Hendebert's Pain de Gluten (1914)	7.9	4.0	80.7	0.2	6.4	0.8	356
Hoyt's Dainty Fluffs No. 1 (1913)	7.2	0.9	86.0	0.3	5.0	0.6	369
Hoyt's Dainty Fluffs No. 1 (1915)	7.0	0.8	79.9	0.5	11.3	0.5	369
Hoyt's Dainty Fluffs No. 2 (1915)	7.5	0.7	66.3	0.3	24.7	0.5	369
Loeb's (1913)	7.3	1.0	27.9	0.4	54.2	9.2	411
Loeb's (1914)	8.5	1.1	34.1	0.2	47.4	8.7	404
Loeb's (1915)	5.7	2.1	52.4	0.6	26.0	13.2	432
Van Abbott's Gluten Rolls (1913)	10.5	2.4	51.6	0.2	33.0	2.3	359
Van Abbott's Gluten Bread (1913)	10.6	2.0	54.1	0.2	30.9	2.2	361
*Rusk, Casoid (1909)	5.4	4.5	37.0	20.8		32.3	522
Rusk, Dieto (1915)	6.4	1.5	15.9	1.0	66.1	9.1	410
†Rusk, Glutosac (1906)	4.5	2.7	36.5	0.9	51.6	3.8	387
Rusk, Glutosac (1915)	6.7	2.5	39.3	1.1	47.0	3.4	376
Rusk, Holland (1909)	11.0	1.3	12.1	0.1	70.4	5.1	376
†Rusk, Jireh (1906)	8.7	3.1	14.6	0.9	67.7	5.0	374
Rusk, Jireh (1913)	5.4	1.9	14.9	1.1	68.0	8.7	410
†Rusk, Johnson's (1906)	6.2	3.0	22.1	0.3	68.0	0.4	364
†Rusk, Protosac (1906)	5.9	2.0	40.9	0.5	48.7	2.0	376
Rusk, Protosac (1915)	7.2	2.9	39.7	0.5	46.7	3.0	373
Rusk, Van Abbott (1913).	10.8	1.2	70.9	0.3	16.0	0.8	355
Toast, Breakfast, Kellogg's (1912)	7.7	2.7	13.6	1.0	63.9	1.9	327
‡Zwieback (ave. of 4)	5.8	1.0	9.8	73.5		9.9	422
Zwieback, Battle Creek (1915)	6.2	1.6	14.3	0.2	76.1	1.6	376
Zwieback, Fromm's (1914)	4.5	2.0	14.3	0.4	57.5	21.3	479
†Zwieback, Glutosac (1906)	7.6	2.5	32.4	1.2	49.3	6.9	389
Zwieback, Glutosac (1915)	5.9	2.5	36.4	0.9	46.6	7.7	401
Zwieback, Goldscheider's (1914)	6.9	2.7	21.3	0.2	65.3	3.6	379
Zwieback Pokorny's (1913)	4.6	3.2	32.9	0.9	10.4	48.0	605
Zwieback, Sanity Alenronat (1913)	8.4	2.0	17.0	0.3	61.6	10.7	411
Zwieback, Sanity Conglutin-Almond (1913)	7.1	2.3	15.0	0.3	54.6	20.7	465
Zwieback, Sanity Oat (1913)	8.2	1.8	14.9	0.5	58.7	15.9	438

*Fetterolf, Univ. of Pa. Med. Bull., Sept., 1909.
†Winton, Conn. Agr. Expt. Stat., Rept. 1906.
‡Atwater and Bryant, U. S. Dept. Agr., Off. Expt. Stat., Bull. 28.
All other analyses made in author's laboratory.

Table II shows the composition of various aerated breads on the market. These have been discussed in considerable detail in the first paper of this series, being used more particularly in the diabetic dietary. As the table shows they are of most variable composition, showing extremes of 28 and 86 percent of protein, 0.5 and 13.2 percent of fat and 5.0 and 54.0 percent of carbohydrates.

In the same table are given analyses of various

proprietary rusks; these too are extremely variable, and emphasize the importance of close attention to the analysis if the dietitian would use these foods with intelligence. The casein preparation, *Casoid Rusk*, for instance, with 37 percent of protein and 32 percent of fat, is a very different food from *Protosac Rusk*, with about the same amount of protein and 3 percent of fat, or the *Van Abbott Rusk*, with 71 percent of protein and hardly any fat. Similarly with the zwieback, the protein ranges from 10 to 36 percent, the fat from 1.6 to 48 percent, and the carbohydrates from 10 to 76 percent. One brand would yield 376 calories per 100 grams, while another would supply 605, although both are sold as zwieback.

TABLE III—SPECIAL BISCUITS, CRACKERS, ETC.

	Water.	Ash.	Protein (Nx6.25).	Fiber.	Nitrogen-free extract.	Fat.	Calculated calories per 100 gms.
Bran and Laxative Biscuits (1914).							
Christian's Laxative Bread	9.9	2.8	10.0	1.3	74.6	1.4	351
Diabetic Bran Biscuit.....	9.3	5.0	9.9	1.7	69.1	5.0	361
Health Food Co.'s Bran Biskue	8.5	3.1	12.1	2.2	61.0	13.1	410
Health Food Co.'s Wafers.	9.7	5.3	10.0	1.4	65.7	7.9	374
Huntley & Palmer's Oval Digestive Biscuits	8.8	2.1	7.8	0.5	64.5	16.3	437
Johnson's Educator Bran Cookies	7.1	3.3	8.9	1.5	64.7	14.5	425
Kellogg's Good Health Biscuit	10.9	4.2	7.7	1.5	74.5	1.2	340
Kellogg's Laxa. (1915)....	6.6	5.0	12.4	6.6	66.6	2.8	...
Kellogg's Laxative Biscuit.	9.4	3.0	16.7	2.4	57.7	10.8	395
Kellogg's Colax	13.1	2.1	1.1	0.1	82.8	0.8	...
Mansfield's Agar Agar Wafers	7.9	2.3	7.1	0.8	69.6	12.0	...
Cheese Wafers (1914).							
Huntley & Palmer's Cheese Straws	6.7	3.4	13.6	0.1	50.0	26.2	491
Sunshine Cheese Sticks....	8.8	2.7	13.4	0.2	64.3	10.6	406
Sunshine Cheese Wafers...	8.4	2.4	13.4	0.2	63.9	10.7	406
Nat. Bisc. Co.'s Al Fresco Cheese Wafers	8.2	4.8	16.5	0.1	59.9	10.5	400
Nat. Bisc. Co.'s Cheese Sandwich	8.6	3.1	14.1	0.1	61.0	13.1	418
Nat. Bisc. Co.'s Cheese Tid-Bit	8.4	5.1	16.1	0.1	58.7	11.6	403
Rademann's Käsestangen..	6.7	3.8	9.3	0.1	46.4	33.7	524
Ginger Wafers (1914).							
Sunshine New England Ginger Wafers	4.2	2.6	6.0	0.2	73.1	13.9	442
Sunshine Yum-Yum Ginger Snaps	7.8	2.8	6.3	0.2	73.4	9.5	405
Nat. Bisc. Co.'s Famous Ginger Wafers	4.1	2.3	6.2	0.1	75.6	11.7	432
Nat. Bisc. Co.'s Ginger Snaps	7.3	2.1	5.6	0.2	75.3	9.5	410
Nat. Bisc. Co.'s Uneeda Jinjer Wayfer	7.9	2.3	5.9	0.1	73.6	10.2	410
Nat. Bisc. Co.'s Zu Zu Ginger Snaps	7.6	2.6	6.8	0.2	73.7	9.1	404
Graham Crackers (1914).							
Battle Creek San. Co., Sweetened	7.0	1.7	8.8	0.7	74.1	7.7	401
Johnson's Educator	6.6	2.9	10.3	1.2	68.9	10.1	410
Johnson's Educator, Sweet.	8.5	3.0	8.5	1.3	69.6	9.1	394
Sunshine	8.4	2.4	8.3	0.4	69.8	10.7	409
Nat. Bisc. Co.'s Crackers..	6.6	2.0	8.3	0.4	72.5	10.2	415
Nat. Bisc. Co.'s Wafers...	5.4	2.0	8.4	0.3	73.4	10.5	422
Oatmeal Crackers (1914).							
Battle Creek San. Co.'s Wafers	7.5	1.7	7.9	0.3	71.4	11.2	418
Johnson's Educator	7.1	1.9	9.6	0.4	70.7	10.3	414
Sunshine	7.8	1.9	8.6	0.3	71.0	10.4	412
Nat. Bisc. Co.....	7.8	1.7	8.5	0.2	72.3	9.5	408
Pretzels (1914).							
Sunshine Pretzelettes	9.5	5.1	10.0	0.2	72.6	2.6	354
Nat. Bisc. Co.'s Pretzelettes	9.4	3.5	10.6	0.2	74.2	2.1	359
Fromm's Butterbrezeln (1913)	6.3	2.0	12.3	0.2	62.7	16.5	449
Rademann's Bretzel (1913)	6.8	3.0	31.4	0.2	50.1	8.5	402
Sanity Bretzels	7.2	3.6	12.8	0.3	55.4	20.7	459
Soy Bean Crackers.							
Hepco Dodgers (1913).....	6.9	5.4	41.6	4.1	20.7	21.3	441
Health Food Protosoy Wafers (1915)	4.8	3.5	37.1	1.8	29.3	23.5	477
Whole Wheat Biscuits (1914).							
Battle Creek San. Co.'s Whole Wheat Cream Sticks..	9.1	1.9	9.2	0.3	70.4	9.1	400
Battle Creek San. Co.'s Whole Wheat Wafers (1915).	6.0	1.9	10.4	0.6	73.5	7.6	404
Bennett's Wheatsworth Biscuit	6.3	2.4	8.1	1.2	73.3	8.7	404
Huntley & Palmer's Wheat Meal Biscuit	7.4	1.7	8.1	1.3	66.9	14.6	431
Johnson's Educator Toasterettes	7.4	1.7	10.1	0.4	73.2	7.2	398
Johnson's Educator Wafers	9.0	0.8	10.4	0.4	78.8	0.6	363
Kellogg's Granose Biscuit.	11.3	3.9	10.3	1.8	71.1	1.6	340
Kellogg's Toasted Wheat Flake Biscuits (1915)..	5.8	2.4	14.2	1.5	74.7	1.4	368
Sunshine Whole Wheat Wafers	5.3	2.3	9.3	0.4	72.5	10.2	419

All analyses made in author's laboratory.

Table III gives analyses of biscuit offered for special purposes, or possessed of common characteristics as regards materials used and flavor. The bran and laxative biscuits have had considerable vogue in recent years as a means of correcting the all too common tendency towards constipation. That wheat bran does possess laxative properties seems to be an accepted fact; whether these properties are due to the peristaltic action stimulated by the bulk and relative coarseness of the bran or to the peculiar organic phosphorus compound, phytin, found in wheat bran, has been a matter of considerable controversy. A properly cleaned wheat bran is doubtless an appropriate, and probably a useful, ingredient in a human food; on the other hand, human beings are not cattle, and certain refinements are necessary to warrant the use of this by-product in our foods. Furthermore, in certain brands of these "bran" biscuits, the bran is by no means a prominent constituent, if we are to judge from the analytical data.

As already stated, it has been shown by Patten and Hart that a considerable part of the phosphoric acid of wheat bran exists in organic form as phytin. Furthermore, wheat bran itself contains about 0.40 percent of galactan. A figure much in excess of this in a biscuit would suggest the use of some other galactan-yielding material, such as agar agar, Ceylon moss or one of the various seaweed preparations. The amount of phytin phosphoric acid present, therefore, would measure in some degree the proportion of wheat bran present, and the percentage of galactan the presence or absence of extraneous substances. These two determinations have been made by the writer in certain of the laxative preparations listed in the table, as follows:

	Galactan. Percent.	Phytin Phosphoric Acid. Percent.
Christian's Laxative Bread.....	0.24	0.36
Dietetic Bran Biscuit.....	0.12	0.78
Bran Biskue	0.22	0.57
Health Food Wafers.....	0.24	0.65
Oval Digestive Biscuit.....	0.09	0.31
Educator Bran Cookies....	0.09	0.41
Kellogg's Good Health Biscuit.....	0.18	0.00
Kellogg's Laxative Biscuit	0.34	0.33
Kellogg's Colax	13.18	....
Mansfield Agar Agar Wafers.....	0.13	....

Colax claims Ceylon moss to be present, a claim

which the above analysis substantiates. *Laxa* claims Ceylon moss as well as wheat bran, a claim doubtless true, but which the writer has not yet had time to prove. On the other hand the *Mansfield Agar Agar Wafers*, which claim agar agar, show only 0.13 percent of galactan, indicating that no large amount, certainly not over one percent, of agar, is present. Some of the other brands may likewise contain small amounts of agar, but no large quantity is present. All of the brands show some phytin phosphoric acid except *Kellogg's Good Health Biscuit*, the amounts ranging from 0.31 to 0.78 percent, and apparently bran is present, as claimed. The cost of these products shows a wide range, from 15 cents to $2.76 per lb., and it is a serious question whether the patient could not secure quite as much relief at a considerably less cost by buying agar itself, or some similar material, and incorporating it with his breakfast cereal.

The suspicion has arisen at times that perhaps the laxative properties attributed to these special preparations might be due, at least in part, to mineral drugs. The brands listed in the table were examined from this standpoint, and while two of them contained small amounts of sulphuric anhydrid and magnesium oxide, it does not appear that any mineral laxative, such as Epsom salts, is present in any important amount. Five of the brands contain from 10.8 to 16.3 percent of fat, and it may be that the laxative properties of these may depend to some extent on the oil or fat present.

The cheese wafers vary considerably in composition, especially in ether extract, two brands showing 26 and 34 percent, from two to three times as much as the other brands. These variations are due chiefly to the amount and quality of cheese used.

The ginger and oat meal wafers require no special comment, the analyses showing the usual

TABLE IV—MISCELLANEOUS BISCUITS, CRACKERS, ETC.

	Water.	Ash.	Protein (Nx6.25).	Fiber.	Nitrogen-free extract.	Fat.	Calculated calories per 100 gms.
Dieto Food Co., New York City.							
Dieto Crackers (1914).....	6.6	1.8	13.4	1.0	68.0	9.2	409
Fromm & Co., Dresden.							
Almond-form Wafers with Chocolate (1913)	2.6	1.0	4.8	0.3	62.3	29.0	529
Crackers (1913)	7.4	3.4	12.9	0.2	68.4	7.7	395
Eierbiscuit (1913)	7.7	1.3	18.8	0.2	60.6	11.4	420
Hazelnuss-Stangen (1913).	5.2	2.9	13.4	1.7	60.8	16.0	441
Salz-Stangen (1913)	6.2	3.6	13.0	0.4	61.2	15.6	437
Stangenin (1913)	6.6	1.6	14.0	0.4	64.4	13.0	431
Health Food Co., New York City.							
Gluten Nuggets (1915)....	5.3	2.8	31.7	0.3	45.6	14.3	438
Glutosac Butter Wafers (1915)	5.4	2.1	31.1	0.4	47.1	13.9	438
Glutosac Wafers, Plain (1915)	7.2	2.6	42.6	1.6	44.3	1.7	363
Salvia Almond Sticks (1915)	2.6	3.4	22.3	0.7	41.1	29.9	523
Heintz Food Co., Chicago.							
Gluten Biscuits (1913).....	6.4	3.5	12.8	1.3	57.7	18.3	447
Glutin Biscuits (1913).....	7.3	3.0	14.5	1.0	67.0	7.2	391
Huntley & Palmer, Reading, Eng							
Acorn Biscuit (1914).....	4.3	1.2	8.8	0.5	42.0	43.2	592
Breakfast Biscuit (1914)...	8.4	1.4	9.1	0.2	72.4	8.5	403
Carmencita (1914)	3.6	0.6	2.3	0.1	64.1	29.3	529
Cinderella Biscuits (1914).	7.0	0.5	6.4	0.2	65.0	20.9	474
Phillipine Biscuits (1914)..	3.8	1.5	9.9	0.7	52.1	32.0	536
Reading Shortbread (1914)	5.4	0.6	4.5	0.1	65.2	24.2	497
Sugar Wafers (1914).....	6.2	0.7	8.4	0.1	83.6	1.0	377
Jireh Diabetic Food Co.							
Diabetic Biscuits (1913)...	5.4	2.0	13.2	1.2	70.8	7.4	403
Johnson Educator Food Co., Boston.							
Almond Biscuits (1906)...	5.3	2.1	29.0	0.5	54.3	8.8	412
Barley Educator Crackers (1914)	8.5	4.9	9.1	0.5	65.3	11.7	403
Educator Gluten Crackers (1906)	6.2	2.9	23.0	0.2	63.1	4.6	386
Educator Gluten Cookies (1911)	4.8	2.7	26.4	0.3	49.8	16.0	449
Educator Gluten Wafers (1906)	6.9	0.9	30.3	0.3	61.2	0.4	370
Educator Original Water Cracker (1914)	8.0	0.8	10.5	0.4	79.8	0.5	362
The Suffragette (1914)....	8.1	1.4	9.0	0.2	71.0	10.3	413
Kellogg Food Co., Battle Creek, Mich.							
Avena-Gluten Biscuit (1912)	7.9	2.1	21.4	0.4	55.5	12.7	422
Potato-Gluten Biscuit (1913)	8.8	0.8	41.5	0.4	48.0	0.5	363
Taro-Gluten Biscuit (1913)	9.4	0.7	31.3	0.4	57.7	0.5	361
Toasted Rice Biscuit (1915)	5.0	3.7	10.1	0.2	80.7	0.3	370
Loose-Wiles Biscuit Co., Boston (1914).							
Chocolate London Biscuits.	6.6	1.3	7.3	0.5	72.9	11.4	423
Hydrox Chocolate Biscuits.	5.5	1.0	5.6	0.4	70.1	17.4	460
Sunshine Brandywine	2.2	0.7	3.7	0.3	71.0	22.1	497
Sunshine Butter Thin.....	7.3	1.8	9.0	0.1	68.9	12.9	427
Sunshine Champagne Wafers	3.2	0.6	4.5	0.1	71.3	20.3	486
Sunshine Clover Leaves...	3.2	0.6	4.0	0.1	70.4	21.7	493
Sunshine Dessert Wafers..	7.6	1.1	6.3	0.2	75.7	9.1	410
Sunshine Matinee Biscuit..	8.3	1.3	7.3	0.2	72.1	10.8	415
Sunshine O So Fine Lunch Biscuit	8.6	1.3	9.0	0.2	68.5	12.4	422
Sunshine Perfetto Sugar Wafers	3.2	0.6	4.4	0.2	68.6	23.0	499
Sunshine Philopena Sugar Almonds	3.8	0.5	2.6	0.2	65.5	27.4	519
Sunshine Saltines	8.7	2.7	8.9	0.2	66.6	12.9	418
Sunshine Tan-San	3.3	0.9	4.2	0.1	65.9	25.6	510
Sunshine Veroniques	3.0	0.6	3.8	0.1	67.4	25.1	511
Sunshine Vienna Sugar Fingers	6.5	1.5	6.8	0.1	75.1	10.0	418
Sunshine Zephyrettes	9.1	1.7	9.4	0.1	67.2	12.5	419
Takhoma Biscuit	8.1	2.0	10.1	0.2	70.3	9.3	405
Tom Thumb Biscuits.....	8.1	1.2	6.0	0.1	76.5	8.1	403
Meyer & Lange, New York City.							
Peterson's Eatsum Swedish Style Milk Wafer (1914)	7.7	1.8	12.7	0.1	77.1	0.6	365
National Biscuit Co., New York City (1914).							
Albert Biscuit	4.7	1.1	7.3	0.1	73.0	13.8	445
Arrowroot Biscuit	6.3	1.1	7.7	0.2	73.9	10.8	424
Baronet Biscuit	7.5	1.5	8.3	0.1	69.4	13.2	429
Bent's Home Made Water Crackers	8.1	0.5	10.4	0.2	79.9	0.9	369
Champagne Wafers	3.6	0.8	5.4	0.2	70.8	19.2	478
Chocolate Tokens	1.7	1.0	4.6	0.6	58.4	33.7	555
Dinner Biscuit	8.1	2.0	11.3	0.2	68.9	9.5	406
Festino Almonds	5.5	1.0	7.5	0.4	59.2	26.4	504
Five O'Clock Tea Biscuit..	6.7	1.5	7.7	0.3	72.6	11.2	422
Lemon Snaps	7.7	1.4	6.3	0.2	75.4	9.0	408
Merrimac Biscuit	8.3	1.8	10.2	0.2	71.9	7.6	397
Minaret Wafers	5.9	2.3	6.4	0.1	73.2	12.1	427
Nabisco	3.3	0.6	4.4	0.1	68.8	22.8	498
Oreo Biscuit	4.9	1.2	5.7	0.4	70.0	17.8	463
Oswego Biscuit	5.4	1.1	7.5	0.1	76.3	9.6	422
Oysterettes	8.9	2.8	10.4	0.2	69.5	8.2	394
Saltine Biscuit	9.5	5.5	8.9	0.2	63.4	12.5	401
Saratoga Chips	8.2	1.6	9.0	0.1	68.0	13.1	426
Saratoga Flakes, Salted...	7.4	4.1	8.6	0.1	67.4	12.4	416
Social Tea Biscuit.....	6.7	1.3	7.8	0.1	73.9	10.2	419
Soda Crackers	9.2	1.8	9.3	0.1	70.1	9.5	403
Uneeda Biscuit	8.9	2.1	10.1	0.2	69.9	8.8	399
Uneeda Lunch Biscuit.....	8.3	1.2	8.1	0.2	69.6	12.6	425
Vanilla Wafers	7.6	1.4	6.3	0.1	69.8	14.8	438
Water Thin Biscuit.....	5.8	1.6	9.7	0.1	77.4	5.4	397
Zephyrette	7.5	1.7	8.9	0.1	68.5	13.3	429

All analyses made in author's laboratory.

range of composition. On the other hand, certain of the graham crackers do not suggest the use of any considerable amount of true graham flour, "unbolted wheat meal." Percentages of fiber as low as 0.3 or 0.4 percent indicate a pretty complete removal of the bran, certainly more than is to be expected in a genuine graham flour.

The two analyses of soy bean crackers represent a food product rapidly coming into use. Not only are these crackers rich in protein and fat, but they are also practically starch-free, as shown by the writer elsewhere, thereby being admirably adapted for use in strict diabetic dietaries.

The whole wheat biscuits show the usual variations found in whole wheat flour itself. As pointed out above, "whole wheat," as applied to a product from which a portion of the bran is removed is a misnomer, and the completeness with which this is done is shown in certain of the brands by their very low content of fiber. Variations of 8.1 to 14.2 percent in protein, from 0.6 to 14.6 percent in fat, from 0.8 to 3.9 percent in ash and from 0.3 to 1.8 percent in fiber are wide in products purporting to have a common source.

The analyses given in Table IV represent typical products of some of the more prominent biscuit manufacturers. The table is necessarily incomplete, but gives an idea as to the composition of these well-known brands, many of which should be considered as confections rather than foods.

FIRELESS COOKERS AS AN ADJUNCT IN THE HOSPITAL KITCHEN[1]

Preparation and Method of Cooking Cereals and Starches—Rice—Tapioca and Sago—Macaroni and Spaghetti—Cereals and Fruits Together Make Delicious Desserts—Cereals and Fruit Juices Are Excellent to Vary the Menu

By FRANCES A. SEELY, Chicago

THE fireless method, with its facility for all-night cooking, is ideal for breakfast cereals, which by ordinary methods rarely receive the long, slow cooking demanded by their nature, because of the early rising this would require. The boiling time lasts only long enough to heat thoroughly each grain or flake, which enters the cooker structurally intact and is there subjected to a long period of slowly falling temperature, during which water is absorbed until the starch cells become completely hydrated. The frequent sweep round and round of a spoon or ladle which converts a stove-cooked cereal into a pasty mass is avoided, because in the fireless cooker nothing can stick or burn. Distinctive flavors and aromas are preserved and are softened and blended by the complete hydration, so that the finished cereal attracts and stimulates the appetite of the most exacting invalid. As remarked by the president of a hospital which had just begun the use of a fireless cooker, "For the first time in the history of the hospital, the breakfast trays went up full and came down empty." This contrasts favorably with a statement made by a writer in the February issue of The Modern Hospital, "in one twenty-four-bed ward the number of trays on which food is left untouched has been known to be as high as 33 percent."

The problem of nutrition involves more than the computation of calories by the dietitian, particularly in caring for the sick or convalescent. The waste through untouched foods can be removed only by developing fully all the desirable qualities which give to each food its distinctive character. The attainment of this end in the practical working out of nutrition without waste is the function of good cookery. Steam kettles and double boilers evaporate and concentrate rather than expand and develop, and, therefore, fall short of the richer results possible with the fireless treatment; results that are obtainable with less expense and waste and without calling for more than ordinary intelligence. Any person capable of measuring accurately and of following plain and simple directions during the few moments that the food is on the stove can produce perfect results uniformly and without a single failure.

The preliminary preparation of cereals is the same for the fireless as for the ordinary methods, except for the quantity of water, which must be proportioned exactly to the result desired. The rule for a firm cereal is based upon experimentation, to ascertain the proportion that each kind will absorb completely; the addition of more water makes a thin product. Flaked cereals, such as rolled oats and rolled wheat, are partly cooked during manufacture and require only the usual proportion of water when cooked by fireless. But the absorption of the full amount without loss from evaporation, and the freedom from stirring, leave each flake distinct and fully distended, so that the finished food is much more attractive. Those most indifferent to delicacy in foods will detect and protest a change from fireless-cooked cereals to the ordinary product.

[1]This is one of a series of articles on the Use of the Fireless Cooker in the Hospital. Other articles will follow.

Particularly marked is the size and tenderness attained by the particles of the coarse-grained cereals, steel-cut oats, cracked wheat and hominy; and those who serve whole wheat find the result superior to that attainable with other means. The coarse-grained cereals are not partly cooked during manufacture, and in the fireless process take up more than the usual quantity of water. One institution found that steel-cut oats became so palatable by this method that they could be served in place of rolled oats. One barrel of the steel-cut went as far as two and one-fourth barrels of the rolled oats.

The fine-grained cereals, yellow cornmeal, farina, wheatena, and kindred products, are particularly pleasing to invalids because of their delicate, smooth, even texture, and distinctive aromas and flavors; practically new foods are made from them, possessing unsuspected qualities of great delicacy. This transformation is strikingly illustrated by cornmeal mush. Four quarts of yellow cornmeal in 24 quarts of boiling salted water, boiled 10 minutes on the stove and placed in the cooker, can be taken out from six to twenty hours later perfectly cooked, hot and ready to serve. In place of the usual granular mush, a beautiful, almost translucent, amber substance glides from the kettle. The entire body of liquid has become incorporated with the countless grains of the meal, each one remaining distinct to the eye although almost impalpable to the tongue. A flavor of indescribable delicacy suggests classification with choice desserts. One quart of meal, weighing 19 ounces, makes seven quarts of delicious breakfast food, weighing 13½ pounds. Failure has attended most efforts to utilize cornmeal cooked in the usual way; few will eat it. As tersely expressed by a small lad in an orphanage, "I don't like cornmeal, Mother; it sticks to the top of my mouth like sand." But this little fellow calls for the second helping of the transformed fireless product; and patients in hospitals have asked that it be served frequently, where none would eat it before. Even racial prejudice was overcome in the case of some aged Irish Catholic Sisters. "Not that awful stuff they sent us during the famine! We fed it to the pigs," was the exclamation when cornmeal was announced for breakfast, but the first taste of the hydrated fireless food led to its receiving a permanent place on the weekly menu.

The fine-grained cereals are exceedingly economical; a few cents' worth of raw cereal converts a great quantity of water into delicious food. On the basis of calories the feat seems to be somewhat of a delusion. But in this respect it is a copy of nature in building up many edible foods chiefly of water. Hydrated cereals introduce water into the system in an agreeable form, and probably the starches are more easily and completely digested when fully hydrated. In one industrial school it was observed that the girls were not stirred by hunger to watch the clock at noon on those days when cornmeal was served for breakfast. Two hundred boys under twelve in another institution were fed frequently with cornmeal at a cost of only 20 cents; a clear gain, because they had refused to eat the former stove product. Thirty inmates of a large home ate no cereals of any kind until the advent of the fireless cooker. An authority on institutional management estimates that the cooker saved in a nurses' training school one-half the former quantities of certain cereals, besides cooking them perfectly.

It may be concluded that there is great economy without loss of nutrition in the use of fully hydrated fine-grained cereals. Yellow cornmeal, one to seven or eight parts water, thinned with milk after removal from the cooker, makes a nourishing and appetizing gruel which is particularly good in maternity cases.

Reports from institutions, and personal experiences, throw much light on the proper use of cereals as foods. A third repetition of rolled oats without a break caused a lack of appetite at breakfast and a feeling akin to nausea in one group under observation. Some institutions dealing with children report that the continuous use of rolled oats in summer resulted in an outbreak of rash. The general deduction is that variety is imperative and adds zest to all cereals, while permitting none to wear out its welcome. The fact that a few could eat no milk on their cereals led to the substitution of fireless-cooked dried fruits with an abundance of juice. Very desirable changes of diet are made possible by mixing one-fourth cornmeal with three-fourths wheatena, farina, or Cream of Wheat. The cornmeal counteracts a tendency of wheatena to become glutinous, and the blending of the food elements and flavors diversely present in corn and wheat is attractive in all three mixtures. By inverting the proportions and using three-fourths of the corn cereal, more economical mixtures are obtained which are equally pleasing. One institution caring for the aged uses as a supper dish one-half farina and one-half cornmeal served with fireless-cooked dried fruit. These permutations and combinations of cereals with cereals, and of cereals with fireless-cooked dried fruits, increase the availability of these economical foods. Delicious desserts can also be served made out of these cereals, moulded and cooled.

Rice. Plain rice is one of the exceptional foods that are spoiled by too long a period in the fire-

less cooker. When left too long it becomes soft and loses flavor. By common consent rice cooked by the Chinese is given the palm of superiority. The qualities which confer this fame can be produced by proper treatment in the fireless cooker. The rice is washed in cold water and boiled for five minutes in nine or more parts of salted water. It is placed in the cooker for exactly thirty minutes. On removal from the cooker it is drained and allowed to steam dry without shaking or stirring. Each grain is fully expanded, is tender yet firm, and stands out, distinct. This rice when cold can be broken up and used in soups, croquettes and puddings, and each grain will retain its shape. The fireless product is so much superior to the ordinary that a considerably further economy can be made by using broken rice instead of whole. Rice in milk absorbs six parts of the liquid to one of rice. It cooks in two hours after five minutes' boiling on the stove, but may be left in the cooker longer if desired. This method is particularly desirable for hospitals and takes the place of two hours' baking in the oven with constant watching and stirring. The quantity of the finished product is doubled with an equivalent gain in flavor. When seasoned with a little nutmeg and sugar, the result is a very economical and delicious old-fashioned rice pudding.

Tapioca and Sago. The fireless treatment of these foods gives wonderful results. The particles expand abnormally and retain their shape perfectly. Tapioca may be flavored and sweetened, and cooked in the same proportion of milk as rice, and with the same large gain in the bulk of finished product. Delicious, dainty and economical desserts may also be made with sweetened fruit juices instead of water, one part tapioca to five parts of the sweetened juice. When cold it will set and form a firm jelly in which the large translucent pearls of tapioca are plainly discernible. All kinds of left-over fruit juices may be utilized in this manner; even dried apple juice, with the addition of lemon and a little nutmeg. The perfect results and increased expansion double the availability of these simple food products for economical management.

Macaroni and Spaghetti. Good macaroni or spaghetti is creamy in color and breaks into short pieces without splitting. The macaroni which splits on breaking is made from soft wheat and is of inferior quality and flavor. The fireless treatment is simple: five minutes' boiling in salted water and a two-hour period in the cooker. Four quarts of water should be allowed to each pound of macaroni to permit proper expansion. The pipes increase beyond conception, and are tender and whole. Stove-cooked macaroni shrinks and toughens when cold, but the fireless product is as full, tender and delicious the second day as when freshly cooked. A greater use of this important food product as a substitute for meat has been urged in THE MODERN HOSPITAL. At the suggestion of the writer an addition was made to the usual supper menu of a charity hospital. Plain macaroni from the cooker was served, with tomato sauce. The cost of the materials for eighty convalescents was only 43 cents and, in the words of the dietitian, "they fairly scraped the plates." The fireless method makes the use of this simple food a great improvement and economy.

NEW NURSES' HOME AT ELIZABETH HOSPITAL

New Jersey Institution Builds Unusually Fine Structure for Training School Pupils

The new nurses' home recently opened at the Elizabeth General Hospital, Elizabeth, N. J., is a handsome three-story brick structure with terra-cotta trimmings. There is a large porch at one end, which will be screened in during the summer and fitted up with comfortable rockers. The top of the building has been so constructed that it may be converted into a roof garden. The interior of the home is said to possess an air of marked refinement. On the first floor are the library and writing room, a class room, two rooms in which the nurses may entertain callers, and a recreation room for pupils, running the entire width of the building. The furnishings of this floor are of fumed oak of the craftsman design, and willow, with draperies to match. A piano and a victrola have been provided. On the second and third floors there are seventeen single bed rooms, also a suite for the superintendent of nurses. These rooms are furnished in gum wood of the same style as on the first floor. Each bed room contains a chiffonier, a dressing table with triple mirror, another table on which books and magazines can be placed, two chairs, a bed, rug and separate clothes closet. There are two bath rooms in the building.

The doors and stairways throughout are of solid oak, while the floors are of North Carolina pine. Particular attention was given to the lighting, many windows having been provided and fixtures of the most approved type for artifical lighting installed.

In the basement a kitchen and laundry have been fitted up, and there is a demonstration room where probationers are given preliminary training for the work they will be required to do when they enter the hospital proper.

The building in which the nurses were formerly housed and which adjoins the new home is being renovated and repainted. This part contains twenty double bedrooms, a suite which will be occupied by the assistant superintendent of nurses, and a recreation room, which will be converted into a sewing and rest room.

The new home is a gift from an anonymous donor and is understood to have cost about $20,000.

The Burke Foundation for Convalescents, with main institution for adults now open at White Plains, N. Y., is about to establish a 30-bed branch for boys' convalescence at Bronxville, N. Y., using the old country home and farm of the late donor, Mr. John M. Burke. Boys from 10 to 16 will be taken free. It will be known as the "Sunny Brae, Boys' Branch," and will be under the direction of Dr. Frederic Brush, superintendent of the Foundation.

THE COST OF HOSPITAL BUILDINGS AND THE FALLACY OF "PER BED" RATING

Prices Cannot Be Compared Unless All Details Are Known—Competition on Present Basis Must Lead to Cheap Materials and Cheap Construction

By T. J. VAN DER BENT, of McKim, Mead & White, New York

IT has become customary, in fact, a universal practice, to quote the cost of hospital buildings by giving the average cost per bed. Some of the good books on hospital construction, French, English and German, have printed long tables which give carefully computed data as to cost per bed of most of the principal hospitals of the world, new as well as old institutions being included.

Of what use are these tables? Cost per bed has no meaning unless a complete statement as to contents and materials is made. We might as well give the cost of a building per square yard without mentioning the number of stories.

This bad practice of estimating the cost of a hospital, or comparing prices, in this way, has become so general that even the few well informed, those acquainted with the fallacy of it, are following the bad example. It is about time that this practice be abandoned, for the benefit of good hospital construction. The harm done by such faulty statements and deceptive conclusions cannot be overestimated. If we continue to judge hospitals by this wrong standard, we place a premium on the poorest hospital construction, on the omission of what we may consider proper details, desirable equipment and essential departments. The new ideal for hospitals from this point of view will then soon be the cheapest type of war barrack. Temporary structures will be introduced for permanent buildings. The era of criminal hospital construction will soon return, and flimsy construction, unhygienic buildings, unsanitary and insufficient equipment, with overcrowding of wards, will be the result.

The common materials of ordinary house construction can be used in hospital work and will cheapen it considerably. We can, for instance, omit tile floors, tile base, tile wainscot, rounded corners, rounded angles; use wood floors with numerous joints and cracks; wood base and wood trim, full of hiding places for all kinds of vermin; we can go further and abandon fireproof construction; we can limit to a minimum the operating service and equipment; omit hospital clinics and pathological service. Of course, hospitals can be built cheaply; can they, however, be longer called hospitals, especially if we go so far as to ignore the few positive results of ages of hospital construction? We do notice the growing of this "cheapening" system in several of the new hospitals, especially in country places. A thorough inspection of a few examples of these "pretty" country hospitals, built at small cost—the pride of the town or village—will soon convince us that this type will, at no far distant time, be called the "village pest house" or the "town slaughter house." Our largest cities can show hospitals so unsatisfactorily and so cheaply built that they are competing with the rottenness, filth and overcrowding of the Hotel Dieu of old.

Manipulation of figures will reduce cost per bed. Why should one include the cost of the clinic, the nurses' home, the help's dormitory and the pathological department? Reduce them to a ridiculous minimum or omit them. Overtax the wards with a large number of beds—say, ten percent to twenty percent emergency capacity. By these means cost per bed can be lowered one thousand dollars at every jump. Reduce the ward service to the standard of twenty-five years ago and a saving of between 20 and 25 percent of the total cost of the building may be accomplished. It seems unnecessary to go deeper into this. The field is large and hundreds of methods of cheapening buildings may be suggested. But—is a cheap building desirable? No, a thousand times no! Cheap hospital building can only mean bad hospital construction. The character of the work of hospital building is expensive, costly. Fireproof, sanitary materials are wanted—hygienic construction is essential. For the sake of saving life and improving the possibilities of good nursing, every day will bring new requirements. The word "cheap" should not be used in hospital construction. We might as well try to ask for cheap diamonds, or cheap gold. If the hospital is good, it is of itself high priced. There is, however, one rule in regard to hospital expense, and that rule should be written on the first page of every hospital specification, on every hospital plan and over the main entrance of every hospital, namely:

"Waste and extravagance in hospital management and hospital construction are criminal."

When the medical profession has fought its battle for standardization of hospital requirements —if this ever does happen—then will be the time to speak of hospitals at a certain price. A comparison of cost per bed between hospitals in one and the same class will then perhaps be permissible. At the present time anyone who speaks of hospitals and mentions cost per bed shows extreme ignorance and unfitness to criticise.

OPERATING A HOSPITAL UNDER THE BUDGET SYSTEM

There Should Be a Budget Committee to Plan for the Future by Comparison With the Past—Items in Which a Well-Kept Budget Can Help the Institution—Budget May also be a Bulletin

By CORNELIUS S. LODER, Hospital Efficiency Specialist, New York

A HOSPITAL needs a budget. In some respects it is of greater value than a cost system. It is economic safety to a hospital if rightly planned and conscientiously followed. It will serve as a weekly, monthly, or annual check-up, or audit on all income and expense. It will perpetuate good effort on stronger lines. It is informing and instructive, insures better attention to detail, increases interest, and tells what to anticipate in blessings and problems. It is forehanded knowledge that reduces annoyance, loss and trouble. It is a pledge. It binds and controls those in authority. It clears for direct, prompt action. A crisis is more readily met and averted.

The budget possesses other advantages, for it insists on a contemplation and prevision, a survey and study of the future, which furnishes inspiration, sureness and direction for better work in the present. In contrast is the method, without a budget, of taking care of past deficiency, some of which may be for perishable and forgotten purchases. This is like paying for a dead horse. Move up! Get in balance by making the past a part of the future, through inviting subscriptions for current, special and improvement expense to be incurred, and include an appropriation, if necessary, for the past.

The budget offers an opportunity to plan so as to change, curtail or extend in agreement with the money paid or pledged. The budget is a large factor in securing and maintaining friendly relations with contributors. The best businesses everywhere in all lines use the budget system. It is founded on sound principles. The only criticism offered is by those who dispute the items and amounts, which present merely a problem of arrangement of the financial policy.

The budget should be prepared and issued in preliminary form to the officials, committees, allied interests and large contributors, well in advance of its time for final approval by the governing body, so as to offer every facility for needed amendment. It should contain all income and expenditures, possible and probable, in elaborate, orderly detail. This will engender confidence, and the good-will of the public.

The careful planning of a budget by the hospital governors is an essential, for their judgment and understanding is at stake. The needs of the institution, a recognition of the wishes of the public, and the ability to cooperate within prescribed, economic, effective lines must be shown. An acceptance of a tentative budget with little or no change is a high endorsement of skill, fidelity and ability on the part of the administrators. When the budget is in actual operation, then their first duty is to watch it, to keep within its provisions and to commence planning the budget for the ensuing year. Statistical information for comparison on everything required for the budget should be readily available and frequent announcement should be made as to how closely the budget is being followed. It should be checked with previous budgets and statements, and copious notations made for future use. In this way the next budget and succeeding ones will be a comparatively easy matter, and the future operation of the hospital will be largely simplified and improved. The budget is one of the several required keys to hospital efficiency.

If an institution has no budget, or if the present or previous ones are not followed, or the budget figures are unreliable, then dependable financial records and reports, if possible, for a term of five or more years should be analyzed and compared. This will disclose and determine the average or standard, barring unforeseen difficulties, plus growth, or change in bed capacity; the number of patients; the population in the zone covered by the institution, together with the class or type of residents; the future population; the kind and cost of service required and expected; the wishes of your principal contributors. Your standing professionally and every condition in your legitimate field, including the other hospitals, must all be carefully weighed and considered in the making of a budget. Plan in your budget for the gradual future growth, development and improvement of your institution on best known lines through a closer and more intimate knowledge of your possibilities, exercising care in omitting unnecessary or premature expenses. You must, in so far as resources will permit, meet the needs of your locality. To insure doing this, it is well to prepare, to be ready with suggestion and by education, through the budget.

Consider, if you please, organization; management; supervision; policy; depreciation; appraisal; endowments; creating a surplus if prosperous, together with annual (or more frequent)

audits of your books, and occasional audits or examinations of your methods, income and cost, by outside specialists.

A special standing committee on the budget, to be known as the budget committee, is to be recommended. Its principal duties will include the preparation of an annual budget for presentation at a designated time. This committee should also submit a monthly report on how closely the budget is followed; to protect against expenditures not provided for in the budget; and to commence the preparation of the next budget. It should maintain intimate relations with the finance committee and the treasurer. It is frequently planned for one member or the chairman of each disbursing committee to be members. The president and treasurer should be active members of the budget committee. The plan of a committee on budget insures the performance of definite work and it takes an important place in the advisory councils.

The budget is a good avenue through which to make announcement to prospective or present contributors and to the public, of anything you desire made known relating to change in policy or management, or cost in operating, or to explain problems, or to invite suggestion. It must be kept in mind that the hospital is a public institution in which all of the public is interested and concerned, and in which many feel themselves "contributing stockholders." It should be conducted like an open book on everything pertaining to its welfare. No institution has ever suffered permanently by taking the people into its confidence, by inviting inspection of the building, methods and manner of keeping its records, its charges to patients (and these should be standardized), its general sources of income, and by expressions of warm and sincere appreciation of those who help it in any way. (Of course individual patients' payments and condition concern the immediate family only.) Systematic publicity is recommended, through the use of the newspaper, the circular letter, and by those connected with it speaking more generally of its affairs than is their custom. All of these endeavors help to maintain the interest, follow and secure the line of least resistance for greater support and cooperation. And all are due very largely to a good budget well administered.

The Hospital of the City and County of Denver has long outgrown its present quarters, and the need for a new, modern hospital has become imperative. A general and insistent demand on the part of the medical profession of the city and county for the erection of a thoroughly up-to-date hospital for this community has resulted in a proposal for a bond issue of half a million dollars for improvements on the city's hospital buildings and equipment, which was to be presented to the taxpayers at an election held May 18, with recommendation from the mayor, Dr. J. M. Perkins, for its adoption.

THE HOSPITAL MANAGEMENT AND THE SURGICAL DIVISION[1]

Medical Men Are in the Structure of Their Institution and Cannot Get Above It—Only Cooperation and Harmony Can Bring Results

BY A. R. WARNER, M. D.,
Superintendent Lakeside Hospital, Cleveland.

Sumner, a sociologist, has defined an institution as "consisting of a concept and a structure." The concept of a hospital—its purpose, its field, its scope—may vary much, but concept there must be to find support: the structure—of human energy, of brains and harmony of action, not brick or stone—may have many forms and power ratings, yet it comprises all the available means to any end. Somewhere between the concept or aim of any hospital and its end results on patients or to society, there must be placed the superintendent or a management and a surgical division together with sundry other factors. It is well for all of us to consider our relations not only back to the fundamental concept of our institution and forward to the ends, but sideways to see how we are getting along with the rest of the means; for this structure is necessarily a thing of parts, and harmony of action alone can give it any resemblance to a whole.

Numerous types of structures have been developed for hospital work, and in these the inter-relation of trustees, staff or no staff, and superintendents, has about exhausted the possible combinations. An institution created to house the career of one physician or surgeon may properly be expected to place the other factors of its structure in the conventional arrangement of satellites; another designed merely to rent beds to the sick is content to hire a good keeper and assemble a minimum of help. But out of the almshouse of yesterday and hospital of today two basic social trends are developing a type of institution by concept and by structure fitted to endure, called as yet a "hospital," yet greater in scope than this word has heretofore implied. These two basic social factors, the strife for knowledge and the recognition of the universal brotherhood and responsibility, have produced the modern teaching hospital, the research hospital, the hospital that is a social force reaching and serving society beyond the circle of its patients, and often, and perhaps best, all these in one. Such a hospital really sees that it is better charity to keep the need of hospital care from a man than to provide it when needed, and that the best care is the cheapest when the real results on patients are counted. It knows that the best patient for scientific work is the patient for whom the institution has done most and that social work is always a help to medical.

The same broad concept may serve a thousand institutions, but the human structures are necessarily individual; therefore the limiting factors and the distinguishing features. You and I are in the works of our respective institutions making their progress more or less, as we count in the resultant force that is bearing them on and determining their trend. "How can we count most and right?" is our problem.

In the few minutes allotted I can discuss but few details of the relation between the management and the surgical division, which may in fact be any division. The advanced institution just described is large enough by concept alone to require as manager a man in complete harmony with this concept and the work of its structure, usually a man with medical training, and to manage such an institution is a career worthy of the best efforts of any

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[1]Paper read before the Society of Clinical Surgery, Lakeside Hospital, April 24, 1915.

man. But the career of a manager is to manage well, to develop a smooth-running organization and to secure the best possible talent in every post to get results. The hospital can make men worth while for its post and make more of any medical man: and it should do this; for it is only through its men that the hospital can produce results. The work of Lakeside Hospital is very largely what the past and present staffs have made it; these staffs have been and are very much as the hospital has made them. The hospital has made its men according to the breadth and force of its concept and the management thereof. It may seem ridiculous for me to presume to imply that the superintendent can make more of a chief surgeon or physician, and to imply it personally would be that, but I contend that a superintendent can and should be a factor in providing them with the facilities and opportunities for work which will have such a result. He can manage the institution to make their work easier and thereby broader and better. A superintendent can use his institution to develop high-grade secondary staffs from material that any good hospital will attract. It is interesting to me to note the effect this has on the supply of medical superintendents. The making of their classmates professionally lures most of those who have started institutional work back to the professional line. Somehow they just can't be happy making men and watching the structure grow in power and effectiveness.

A superintendent who doesn't really want a progressive staff working in the front ranks of their respective specialty is just a "keeper" of more or less physical property. If he is interested in the advancement of knowledge and of social welfare there is much that he can do to help his specializing professional workers, much cooperation to bring about many things to have on hand that there may be no delay in work, and many extensions and concessions to arrange, all to the same end.

Another interesting phase in living the relations between the superintendent and the surgical or other division is that of keeping the supporting concept up to date. In other words, it is the superintendent who must harmonize between the trustees and the working professional experts and who must unify the different viewpoints and personalities, now to drive ahead here, and now to curtail there, so as to get the most from it all. It is a satisfaction to see your hospital grow broader, and to do a little more in this way or that each year. It is pleasing to manage an institution to promote health when one can see that it is giving health or longer life to a few more every year, especially if you have been working with the others for just this end.

The general, if not quite universal, failure of the clinician to give proper attention to the sociologic and psychic result of sickness and a stay in the hospital on a patient and his family, rich or poor, gives the superintendent both a responsibility and an opportunity to help. A little thought and consideration from the hospital caring for a sick friend or family member is as much appreciated by the rich as the poor, and it saves the patient just as many stresses and strains. Social service for the rich does not use "material relief" to be sure, but thought and kindness will relieve just as many worries for them as for others. The social service department of the hospital should be composed of a few special workers, of everyone else who ever sees patients or their friends, and of the superintendent, the best worker of the lot.

The relation of the management to the surgical division is that of constant cooperation to make the department's work, scientific progress and results, better. The reverse relation is just the same. From the surgeon there should be the same constant cooperation to make the work of the superintendent, organization and care of the structure of the hospital, more efficient and productive; and the relation between any and all other departments is identical. You are in the structure of your hospital and you cannot get above it. Make all of it the grade you wish to be. I presume a hospital without good medical and laboratory departments could have a large surgical service, but I cannot conceive of a hospital which does not maintain good medical and laboratory departments developing the scientific supplements which are today essentials for a good surgical department. There is an interdependence between all departments of the hospital structure which is essential and fundamental. Independence is secured only outside the works: it is merely isolation. Harmony and cooperation are the elements of progress.

JOKES AND QUIPS HELP THE HEALTH

New York State's Health Department Calendar Disguises Much Wholesome Advice in a Sugar Coating

The New York State Board of Health has been publishing an interesting monthly bulletin for a long time. The January number, recently issued, is unique among publications of the kind, taking the form of an annual calendar.

Many of the entertaining quips, jokes and wise saws of the old-time calendars are dovetailed in between an immense amount of health information and advice. A rhyme, a rhapsody and an apostrophe on the glories of each month are wedged in between bits of health talk.

For instance, Professor C. E. A. Winslow, the editor, tells us, in January, that "the sleigh bells, and the voices of the children on their way to school, sound merrily through the crisp, cold air;" and then proceeds to tell "How to avoid colds." In February, "old winter is bringing up his reserves and trying desperately to stave off the final victory of the sun," and then "Protection of Public Water Supplies" gets a hearing.

In the calendar pages, in the schedule of noted events, under the dates of their occurrence, are such occasional reminders as "Registrars, mail in your birth and death certificates."

As the seasons march along, in July, we are reminded that "the crops are coming on fast under the influence of the hot sun, and the noontide is full of the hum of insects, which gracefully leads up to "Keeping down the Flies and Mosquitoes."

Dr. Herman M. Biggs, State Health Commissioner, and Professor Winslow have produced a delightful and informative calendar. Its pleasant taste will make it enjoyable, while its curative powers should make it good medicine—all going to show that a touch of humor gets under the skin.

Dr. Harry Hamilton Snively, of Columbus, Ohio, a surgeon in the Ohio National Guard for twelve years, and formerly an instructor in the Ohio University Medical School, is at Kiev, Russia, directing the work of the American Red Cross behind the Russian lines. Dr. Snively, who sailed from New York March 22, was accompanied by eleven Red Cross nurses who went to relieve the nurses of a previous contingent. The nurses with Dr. Snively are: Misses Cora V. Johnson, Aurel Baker, Sara Hibbert, Katherine Bartlett, Eleanor Soukup, of Chicago; Misses Marion Echternach, Anna Roumaine Smith, Clara Barndollar, of Philadelphia; Miss Sara A. Lee, of Lakewood, N. J.; Miss Mabel Burnham Rich, of Providence, R. I.; and Miss Hattie Reinhardt, of Stanley, N. C.

The MODERN HOSPITAL

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Contributors, subscribers, and readers will find important information on advertising page 34.

The Neighborhood or Branch Hospital as a Factor in Preventive Medicine

The past decade has witnessed the establishment and organization, in our large cities, of many special hospitals and small general hospitals, by commercial or private interests, either for the purpose of serving special classes of individuals, or with the almighty dollar rather than efficiency as their dominant aim.

It is true that the life and influence of these institutions has often been short and negative. The factors responsible for their existence are varied. The principal reasons for their establishment are given herewith, but the list is not complete, nor is it arranged in order of importance.

1. Established on account of a local or neighborhood demand which may be both public and professional.

2. Established for the treatment of special diseases usually not handled by all general hospitals.

3. Established by medical cliques out of touch with hospitals already existing.

4. Established by fraternal, industrial or religious associations.

5. Established by insurance or manufacturing companies, or by combinations of employers and industrial agencies.

6. Established by a surgeon or groups of surgeons and specialists for the care of their private patients.

7. Justified by the overcrowded condition of existing general hospitals.

If the commercial spirit is in control, or the agencies behind these small institutions are mercenary or without hospital experience and training, the ultimate result is disastrous to both promoter and physician.

Good reasons for the establishment of many of these institutions seldom exist, yet it must be recognized in certain instances that satisfactory reasons can be advanced. The proximity of industrial plants and a large artisan population often brings about the local or neighborhood necessity. Herein exists the opportunity, in the name of preventive medicine, for the existing, highly organized and often well-endowed general hospital with its reputation, its influence, its administrative machinery and efficient methods. The necessity proven, foresight and money are needed in the order named.

A survey of the influences exercised by the small commercial hospital on the community and the medical profession does not reveal justification for public or professional support. That these institutions are entirely lacking in educational and scientific influences is at once apparent. The higher altitudes of the scientific teaching of medicine in a practical way can only be reached through the well-organized, well-endowed, large general hospital. Assuming this to be true, hospitals of this type should attempt to cover the field and establish branches in localities without hospital facilities.

While special hospitals such as children's, orthopedic, lying-in, etc., have increased in number and importance in the last decade, it has in no wise changed the axiom that large general hospitals should provide space and means for the care and treatment of the specialties. Group-diagnosis, group-treatment and the interdependence of one specialty on another has developed sufficient importance to make it necessary for large general hospitals to recognize and maintain facilities for the practical teaching of all the specialties of medicine.

This all pertains to the educational aspects of medicine. What about the prevention of disease? Branch units of general hospitals in localities remote from hospital centers will have a dominant influence in educating the communities in hygiene, sanitation and better living. Neighborhood or branch hospital units should be completely equipped and at least offer facilities for the proper care of medical, surgical and maternity patients. If properly located, an out-patient de-

partment and children's and infants' clinics would enhance the value of the hospital to the community and broaden its influence. The attending staff of the hospital should be composed of medical practitioners of the highest class in the locality, and the chiefs of departments of the main hospital should act as consultants. The extension of branch institutions to the suburban towns is desirable as a factor in preventive medicine. Investigation of the problem would probably show that the maintenance of a private patients' service in these suburban branches would make them nearly self-supporting.

The maintenance of an out-patient department in branch units will serve city or suburban neighborhoods which are remote from the large central out-patient department. The development of social service work, prenatal clinics, dental clinics, pediatric clinics, the formation of classes for the postural treatment of orthopedic deformities, and milk-fund organizations in connection with the out-patient department of these units are beyond comparison as a community educational factor in hygiene and preventive medicine. A clinic with its social service and special departments will create higher standards for the medical men of the locality. The residents of the neighborhood may become interested both from a financial and charitable point of view. Relatives and friends of patients will save much time and some money on visiting days. The branch unit early becomes a neighborhood institution encouraged by local pride and interest, though controlled by supervision from the main hospital. Transportation facilities for the sick were never better than today, yet it is well known that the families of many patients object to transporting the sick member long distances to hospitals, even when the necessity of a surgical operation is apparent.

The cost of care of patients in branch units can be shown to be much less than in the main institution. Administrative, purchasing and training school departments can be supervised from the main hospital. Pupils from the training school for nurses and resident interns from the staff of the main hospital should serve from one to three months in the branch units, providing thereby trained workers, and a continuity and efficiency of service equal to the parent institution. Many overhead charges are thus lessened or eliminated.

A branch unit of the character described has been under the supervision of the writer for nearly two years. A comparison of its per capita cost with that of the main hospital shows a daily per capita of $1.98 for the branch unit as compared with $2.70 at the main hospital. While the experiment is too recent to determine its local influence on the community served, it has not been too short to demonstrate that it has fulfilled a professional need. The possibilities of its development as a large general unit of the main hospital with increasing community interest is already apparent. A medical, surgical and maternity department is represented therein and a convalescent service maintained. When the main hospital is overcrowded in any department relief is often arranged through the transfer of convalescents to the branch unit. The benefits accruing to convalescents through these transfers opens up the subject of convalescent hospitals, which is foreign to this paper.

The public is already familiar with branch banks, branch department stores, factory branches, and the like. Why not branch hospitals?

W. L. Babcock.

Attend the Convention

The time draws near when all arrangements to attend the convention must be completed. Those who have been in doubt about sparing the time and money, had better make up their minds now that neither could be employed to greater advantage.

These conventions are not junketing expeditions; they have a serious purpose—in fact, they have four purposes, any one of which would more than justify their continuance, even from the standpoint of money: 1. They afford an opportunity for hospital workers to get in direct, material touch with the plans, ambitions, purposes and actual achievements of others in the same line of activity; 2. They make us all more serviceable to our institutions at home by affording opportunity for us to discuss our own special problems in debate on the floor of the convention, and with small groups of well informed people in our little grill room meetings; 3. They make it possible for us to measure ourselves up, as administrators, and as men and women of special training, with others in pleasant competition with whom we must engage in our life's work, to the end that we may appreciate our own shortcomings and try to overcome them, and place a value on the superior experience, training, judgment and personal qualities of our coworkers; and last, and by no means least, they afford periods of rest and recreation and absence from worry, amid agreeable surroundings and in the company of kindred spirits.

For any one of these reasons, everyone connected with institutional work or the care of the sick should make every possible effort to attend the convention at San Francisco. Another word to trustees: the man or woman who lives, year in

and year out, amid the intensive strain of hospital life, must get tired and listless and grow stale. Things that are really important cease to make an impression on tired, stale people; the horse that is constantly goaded eventually ceases to care about the whip.

Let your superintendent get away from "the job" for a few weeks, and be assured that he or she will come back, not only invigorated, rested, and ready to put into practice many little plans for your betterment long contemplated, but not yet set to work, but he or she will pick up many suggestions that, in the course of the year, will far outweigh the expense incurred. If your board has not already done so, make the necessary appropriation for your superintendent's expenses for the San Francisco convention—and charge the account to "material betterment."

A New Hospital Association

On another page in this number will be found notice and program of a meeting to be held in Milwaukee on June 24, 25, 26, for the organization of the Sisters' hospitals of the northwest.

It is announced by those responsible for this movement that it is the intention to create a permanent association of these important institutions, and that there is hope that like organizations will be created in other sections of the country, until all the Sisters' hospitals in this country and Canada are brought under state or provincial associations and that eventually these hospitals shall form a nation, or even continent wide, organization.

It goes without saying that this new development in hospital efficiency is one of the most important factors of progress in the care of the sick that has ever occurred anywhere.

It will be remembered by a good many that at the St. Paul meeting of the American Hospital Association last year a report was made by the Committee on Standardization, in which it was urged that while all attempts to standardize the hospitals from without had signally failed, the hospitals themselves had taken the matter in charge and were doing valiant work in elevating standards of service—from within. The organization of the Sisters' hospitals into an association is most eloquent proof that standardization from within is making giant progress.

It may be asked why the Sisters' hospitals do not fraternize with and become part of the American Hospital Association.

For a number of years past those in attendance on the Association conventions have seen, far back in the audience, at the sessions, one or two or more pairs of Sisters, closely attentive to the proceedings—but taking no part. And in almost every case these pairs of Sisters belonged to local hospitals, and it is not known that any of the Sisters representing hospitals have ever gone to another city to attend the convention.

There are a number of reasons why the Sisters' hospitals should form an organization of their own: 1. Sisters go abroad only in pairs, and it costs money to travel—twice as much for one as for two. 2. Sisters do not stop at hotels, and it is often embarrassing and sometimes impossible for them to lodge with local Sisters. 3. The Sisters are reserved, by nature, by instinct, and by religious necessity; and in the presence of others than members of their own orders, they would be under compulsion to hold themselves in the background—which would prevent their participation in the proceedings of a mixed assembly, and hence they would lose a large measure of the benefit of the proceedings by their inability to ask questions and discuss problems. 4. Sisters, because of their isolation and the repression of their lives and their training, would be unable to meet, on an equality, and for an interchange of experiences in debate, the men and women in the lay hospitals, almost all of whom have been in unhampered association with their fellows of both sexes all their lives.

When all the above considerations are taken into account, it will readily be seen why the Sisters must have an association of their own, and why these association meetings must be largely confined within easily reached distances.

Those of us who had not given the matter much serious thought, but who have often wondered why and deplored the fact that the Sisters did not take greater interest in the American Hospital Association, will now wonder why it had never before occurred to them to organize their own association.

Now that the Sisters have made a start in a new and untried avenue of efficiency, let us all bid their association Godspeed! Let us hope that it will grow and be strong, and ever stronger, and that as their opportunities for intercourse with each other grow, their institutions may ever speed upward toward the beautiful fruition planned far back in the mists of history when those consecrated to the service of God sought out the sick, the hurt and the unhappy, with the divine purpose to serve their Master by serving his children.

Miss Harriet E. Holden has been elected superintendent of the Lowell General Hospital, Lowell, Mass., succeeding Miss Sara A. Bowen, who resigned to accept the superintendency of the Springfield Hospital, Springfield, Mass. Miss Holden is a graduate of the Lowell Hospital training school and was employed as assistant superintendent under Miss Bowen.

HOSPITAL, MEDICAL, AND SPECIAL MEETINGS

THE HOSPITAL SECTION MEETING

American Medical Association, Section on Hospitals, Has Excellent Program for San Francisco—Some of the Topics

The Section on Hospitals of the American Medical Association will hold its sessions in San Francisco June 22-25, in rooms set apart for the purpose in the Exhibition Hall inside the Exposition grounds.

Because the conventions of the American Medical Association and the American Hospital Association are held amid such excitement and because there are so many side attractions this year, the management of the American Medical Association very early gave warning that it would be necessary to abbreviate programs as much as possible in order to allow those in attendance to see the Exposition and to see the country for which many of them had come such long distances. Therefore the Hospital Section program is small this year, but it is to be a most interesting meeting, as the following program indicates.

Program of Section on Hospitals

Meets in Exposition Memorial Auditorium
Chairman—Winford H. Smith, Baltimore.
Secretary—John A. Hornsby, Chicago.

TUESDAY, JUNE 22—2 P. M.

1. Chairman's Address—Winford H. Smith, Baltimore.

Symposium on Venereal Diseases

2. Efficient Dispensary Clinics a Requisite for Adequate Coping with Venereal Disease—Michael M. Davis, Jr., Boston.
3. The Control of Venereal Diseases in California—Robert T. Legge, Berkeley, Cal.
4. The Problem of Venereal Disease Quackery—Calvin S. White, Portland, Ore.
5. Venereal Disease Clinics in New York and a Statistical Efficiency Test—Robert J. Wilson, New York.

WEDNESDAY, JUNE 23

This section will hold no meeting on this day, but will join in the commemoration day program.

THURSDAY, JUNE 24—9 A. M.

6. Medical Teaching in Hospitals—H. T. Summersgill, San Francisco.
7. The Efficiency Standard at St. Joseph's Hospital, Philadelphia—Joseph M. Spellissy, Philadelphia.

THURSDAY, JUNE 24—2 P. M.

8. Important Elementary but Often Neglected Details in the Administration of Small Hospitals—L. W. Littig, Davenport, Iowa.
9. Hospital Efficiency as Produced and Measured by a Follow-Up System—Arthur A. Howard, Boston.
10. The Relation of the Roentgenologist to the Hospital—H. W. Van Allen, Springfield, Mass.
11. The Experience of Lakeside Hospital in the Manufacture and Administration of Nitrous Oxide for Anesthesia—A. R. Warner, Cleveland.

Commentary on the Program

TUESDAY MORNING, JUNE 22

Tuesday morning, as usual, is given over to the general meeting of the American Medical Association and no sections hold sessions at this time.

TUESDAY AFTERNOON, JUNE 22

The afternoon's session provides for the chairman's address and the symposium on venereal diseases.

Of course, it is useless to speculate on what Dr. Smith will talk about, but he has taken great interest in the section the past year and will undoubtedly bring to the section some thoughts and problems that will be well worth while.

The symposium on venereal diseases will inject into the program one of the most vital topics now before the people of this country. Until the last few years it has been regarded as impolite and unethical to talk about venereal diseases in open meetings and these diseases have been regarded as peculiarly within the realm of the medical profession. Now, however, there is a feeling that venereal diseases rise to the dignity of a great, almost universal, social problem and entitled to consideration even in lay assemblages. It will be extremely becoming, therefore, for the Hospital Section to take up for consideration the handling of this great class of diseases as a part of the work of its annual meeting.

Mr. Davis, who will speak on "Efficient Dispensary Clinics a Requisite for Adequate Coping with Venereal Disease," knows what he is talking about, since, in the Boston Dispensary, of which he is director, he has first-hand information as to the importance, and the difficulties of handling these diseases. Mr. Davis will tell us something about the handling of this class of diseases in dispensaries and will undoubtedly take us into the hospitals themselves with a view to considering the handling of them in a physical way.

Dr. Robert T. Legge, of the University of California, who will talk on the control of venereal diseases in that state, has had very much to do with a propaganda which has advanced the handling of venereal diseases on the west coast to an extent that is not found in many places.

If there is any class of diseases in which the quacks have reaped a harvest it is in the venereal diseases. These diseases are not very well understood, and it is usually the ignorant and gullible who get them in their worst form, perhaps largely because of the fact that they do not know what they have or what to do about it until they get into so serious a condition that they are badly frightened as well as in a bad way physically. It is a peculiarity of venereal diseases that their victims do not like to take them to their family doctor, and the result is that they find their way to the quacks' establishments. There is a cure for this and Dr. Calvin S. White, of Portland, Ore., will tell us about it.

If we are to give a proper value to any class of diseases, with a view to approaching the problem of their cure, we must have statistics, and very few statistics have been created in connection with the venereal diseases; New York has perhaps done more in this field than any other city or state, at least in this country, and Dr. Robert J.

Wilson, who has charge of the infectious diseases for New York City, will give us some statistics and an analysis of the spread of venereal diseases.

We are indebted for the above symposium to Dr. William F. Snow, secretary of the American Social Hygiene Association, who many months ago became convinced that the hospitals themselves ought to approach the problem of venereal diseases with a view to their proper handling. There are only two specially constructed venereal hospitals in the world, one in London and the other the Brady Urological Clinic connected with the Johns Hopkins Hospital, but there is an insistent demand for the special architecture and special arrangements in general hospitals for the handling of these diseases and Dr. Snow thought it would be extremely advantageous if the whole subject could be taken up in the Hospital Section.

Wednesday there will be no sessions of any of the sections, since the day is to be given over as Commemoration Day and there will be a general program and one or two general sessions.

THURSDAY MORNING, JUNE 24

There is no doubt that the creation of the Section on Hospitals five years ago gave an impetus to the growing idea that hospitals were perhaps more important, because of their function in teaching physicians and nurses, than even in the other function of caring for the sick. The creation of the Section on Hospitals was the occasion of the discovery by teachers in medicine that the hospitals of the country had something to do with medical education. Since that time the hospital ideal has taken on a new meaning and it is now almost unanimously agreed that every hospital must be a teaching hospital, not necessarily a university institution or a medical school affiliant, but that it must teach its own medical staff, its interns and its nurses and thereby do its part for the community which it is intended to serve. There must obviously be a school teaching angle of the subject also. Dr. Osler some years ago gave as his opinion that it made very little difference whether students in medicine attended lectures or not, or whether they took examinations, and that the main thing was that they should attend small hospital clinics and should have plenty of time to read and think about what they saw in the institutions. There is no doubt that a time is coming when the hospital will occupy even a far larger place in medical school teaching than it does now. The University of California is a leader in this line of thought and Dr. Summersgill, superintendent of the University Hospital, is to read a paper on the subject and will undoubtedly give us some well developed ideas as to how hospitals can best serve the teaching purpose.

No hospital today can teach students or its own staff or interns or nurses without taking scientific care of the sick entrusted to it, and scientific care of the sick contemplates proper records and proper scientific work in every department. That hospital which has high efficiency standards and is giving its sick the best possible care is the hospital that keeps its records straight. Dr. Spellissy, of St. Joseph's Hospital, Philadelphia, will tell us how one institution is doing its part to help medical education and to advance the scientific care of the sick.

THURSDAY AFTERNOON, JUNE 24

A great many small hospitals in the country are officered by inexperienced people. Unfortunately, these institutions are not able to pay large salaries, and many of them cannot attract trained hospital administrators, and in proportion as the superintendents in small institutions are untrained in their work, just in that proportion are they likely to either ignore or underestimate the technical parts of the hospital administration, good intern service, good nursing, proper pathological work and x-ray work, the keeping of proper records—and all these are highly necessary even to the smallest institution that offers itself as a haven and place of cure for the sick and suffering. Dr. Littig, of Davenport, Ia., has had a broad experience in staff service in hospitals and he knows perhaps as well as any man in this country about the "Important Elementary but Often Neglected Details in the Administration of Small Hospitals," and his address should be instructive, especially to the administrators of small institutions.

There are no methods of measuring the value of hospital service by the number of people who enter the doors of the institution, or by the number of those who go out apparently well; nor is the measure of their service to be counted by the mortality list, because many extraneous conditions may weigh in increasing or diminishing the mortality percentages. But there is one definite, unerring way to determine the value of the hospital service and the service of its medical staff, and that is by following the patient back into his home. It might be almost said that Dr. E. A. Codman, of Boston, discovered this way—at any rate he has written about it and talked about it and harped upon it in season and out, until the rest of us have taken it up and many of us have claimed it as our own. Whether Dr. Codman really discovered that "end results" were the only criterion by which hospital service could be judged is beside the point. The main fact is that more good work has been done in this field in Boston than anywhere else. Dr. Arthur A. Howard will tell us about that work and his paper should be an inspiration to us.

The strides in roentgenology and the value of the x-ray in medicine and surgery have been so rapid that it is impossible for us to keep up with events in that great and important field of medical practice and we must have landmarks along the way from time to time to keep us posted about what is being done and how. Dr. Van Allen, of Springfield, Mass., is one of the leaders in roentgenology and in diagnosis by means of the x-ray. His paper on "The Relation of the Roentgenologist to the Hospital" should be helpful to medical men and hospital workers.

It is only a few years since nitrous oxide gas was used only in the dentist's office. In ten years nitrous oxide gas as an anesthetic has developed until it is today the anesthetic of choice nearly everywhere. For a long time there were untoward results and some bad accidents, and we blamed it upon the administration. Dr. A. R. Warner, of Lakeside Hospital, Cleveland, and the surgeons associated with him in the work of that institution, and in Western Reserve University Medical School, thought there was another consideration, and that the quality of the gas itself had perhaps as much to do with unhappy results as faulty administration. Dr. Warner has done a wonderful amount of work with the mechanism employed in the manufacture of nitrous oxide gas; he thinks hospitals can and should manufacture their own gas. Some months ago THE MODERN HOSPITAL published a paper by Dr. Warner on this subject, with drawings showing the apparatus and method of manufacture. Dr. Warner has made new progress and knows more about the topic than he did, and will undoubtedly give us a good paper covering many important points about anesthetics in general and nitrous oxide in particular, and about the right and the wrong way to make it, and administer it.

LAST CALL FOR SAN FRANCISCO MEETING OF AMERICAN HOSPITAL ASSOCIATION

Superintendents Cannot Ignore the Vast Experience of Others and Still Qualify as Trained Executives—Attend the Meeting

The American Hospital Association will meet in San Francisco at Hotel Inside Inn, June 22, 23, 24, 25. The executives are sparing no pains to make this year's meeting one of signal success.

The program is one of the best ever prepared for a hospital audience. The late Dr. Mann spent months in securing some of the best men and women in hospital work to prepare papers for the coming convention. The writers of papers have been untiring in their efforts to secure information from all sources to make their papers interesting and instructive. How any board of trustees can refrain from sending a representative to this hospital convention is a mystery. Thousands of dollars are saved each year from facts learned at these meetings and put into practice by live superintendents all over the continent.

Is your board financing your attendance at the San Francisco convention? If not, take the matter up with your chairman without delay and doubtless he will arrange for your attendance at the convention.

The planning, equipping and maintaining of hospitals is too complex a matter to expect a superintendent to cope with, staying at home. Superintendents who attend these annual conventions are not only worth more to their boards, but they are also worth more to other boards requiring their services.

A glance over the official program, published in May, will convince anyone that it will pay to attend this meeting.

The Association needs all its members at its meetings. Each member needs the assistance of the Association's annual meetings.

The Association Special will be operated on the following schedule: Leaves Union Station, Canal and Adams streets, Chicago, 6:10 p. m. June 13.

This train will convey members through a country of unsurpassed beauty. In fact, it is a trip of a lifetime. Do not let anything interfere with your trip to San Francisco this year. Remember: big program, big attractions, a big trip for little money!

The officers of the Association again appeal to the members to get at least one new member before the big convention. H. A. BOYCE, Secretary.

New Members of the Association

Dr. Boyce has forwarded to THE MODERN HOSPITAL the following list of new members who have joined since the St. Paul meeting:

1. Dr. J. LeRoy Anderson, Supt. Chicago-Winfield Tuberculosis Sanatorium, Winfield, Ill.
2. Sister M. Amselins, Supt. Our Lady of Lourdes Hospital, Hot Springs, South Dakota.
3. Miss Annie A. Aitken, R. N., Supt. Rutland Hospital, Rutland, Vt.
4. Dr. E. H. Bainbridge, M. D., Supt. and Owner Bainbridge Private Hospital, Philadelphia, Pa.
5. Dr. Moses Barron, Pathologist, City and County Hospital, St. Paul, Minn.
6. Miss Ruth Blakiledge, Surgical Nurse, Iowa Lutheran Hospital, Des Moines, Iowa.
7. Pauline J. Buehr, Asst. Supt. Greenwich General Hospital, Greenwich, Conn.
8. Mr. Hiram M. Burton, Trustee Robert B. Brigham Hospital, 19 Milk St., Boston, Mass.
9. Miss Mary I. Bustard, R. N., Supt. of Nurses General Hospital, Kansas City, Mo.
10. Dr. J. W. Coon, Supt. Municipal Tuberculosis Sanitarium, N. Crawford and Bryn Mawr Aves., Chicago, Ill.
11. Mrs. Alice C. Cleland, R. N., Supt. Cooley Dickinson Hospital, Northampton, Mass.
12. Miss Margaret J. Curry, R. N., Supt. of Nurses, Herman Kiefer Hospital, Detroit, Mich.
13. Miss Cora May Davies, Asst. Supt. Lima Hospital, Lima, Ohio.
14. Mrs. Clara R. Dice, Supt. The Franklin Hospital, Franklin, Pa.
15. Miss Freda L. Dixon, R. N., Asst. Supt. People's Hospital, Peru, Ill.
16. Mr. Robert D. Dixon, Trustee Robert B. Brigham Hospital, 232 Claren Ave., N. Boston, Mass.
17. Miss Fannie A. Dougherty, Supt. Cottage State Hospital, Philipsburg, Pa.
18. Dr. Geo. G. Eitel, Trustee and Pres. Eitel Hospital, 212 W. 14th St., Minneapolis, Minn.
19. Sister Esperance, Supt. of Nurses, St. Mary's Hospital, 2500 So. 6th and N St., Minneapolis, Minn.
20. Miss M. S. Foy, R. N., Supt. of Nurses Battle Creek Sanitarium, Battle Creek, Mich.
21. Mr. J. J. Gentry, Supt. S. C. Baptist Hospital, Columbia, S. C.
22. Miss Elizabeth C. Griffen, R. N., Supt. Hanover Hospital, Milwaukee.
23. Miss Mabel F. Gray, Supt. of Nurses Winnipeg General Hospital, Winnipeg, Man.
24. Miss Martha W. Harris, R. N., Supt. of Nurses S. C. Baptist Hospital, Columbia, S. C.
25. Mr. J. E. Haugen, Supt. St. Paul Hospital, St. Paul, Minn.
26. Miss L. I. Hebson, R. N., Supt. Montevideo Hospital, Montevideo, Minn.
27. Miss Ethel M. Henders, Supt. Olean General Hospital, Olean, New York.
28. Miss Bena M. Henderson, R. N., Supt. Children's Memorial Hospital, 735 Fullerton Ave., Chicago, Ill.
29. Miss Fanny L. Hinman, Supt. Sibley Memorial Hospital, Washington, D. C.
30. Miss Jean Alison Hunter, Supt. St. Luke's Hospital Association, Jacksonville, Fla.
31. Miss Esther Jackson, R. N., Supt. of Nurses Iowa Lutheran Hospital, Des Moines, Iowa.
32. Miss E. Celeste Jamison, Supt. of Nurses Martha Jefferson Hospital, Charlottesville, Va.
33. Miss Annie Johnston, Supt. Roosevelt Hospital, Philadelphia, Pa.
34. Miss Emma J. Jones, Asst. Supt. Rochester General Hospital, Rochester, New York.
35. Dr. D. N. Jones, Hospital Surgeon, Eitel Hospital, 2822 Humboldt Ave., Minneapolis, Minn.
36. Sister Kashla, Supt. of Nurses St. Mary's Hospital, Minneapolis, Minn.
37. Mrs. Harriet G. Knapp, Supt. Stillwater City Hospital, Stillwater, Minn.
38. Miss Lutie E. Larsen, R. N., Supt. Decorah Hospital, Decorah, Iowa.
39. Sister Laurentive, Supt. of Nurses St. John's Hospital, Fargo, North Dakota.
40. Miss Mary C. Ledwidge, R. N., Supt. of Nurses St. Mary's Hospital, Rochester, Minn.
41. Sister Leo, Asst. Supt. St. Mary's Hospital, 2500 So. 6th and N Sts., Minneapolis, Minn.

42. Miss Mary Elizabeth Lewis, Asst. Supt. German Hospital, 551 Grant Place, Chicago, Ill.

43. Mr. E. G. Liebold, Trustee Henry Ford Hospital, Ford Motor Co., Detroit, Mich.

44. Mr. S. G. Lindholm, Member Hospital Ass'n, Bureau of Municipal Research, 261 Broadway, New York City.

45. Miss Helen L. Little, R. N., Supt. St. Alban's Hospital, St. Albans, Vt.

46. Sister M. Louise, Supt. St. Joseph's Hospital, Deadwood, South Dakota.

47. Miss Mary B. Ludy, R. N., Supt. German Lutheran Hospital, Sioux City, Iowa.

48. Mr. Malcolm I. McEachern, Supt. Vancouver General Hospital, Vancouver, B. C.

49. Dr. Norman MacLeod, Supt. Newport Hospital, 6 Powel Ave., Newport, R. I.

50. Mrs. Chas. Mallory, Pres. Board of Managers, United Hospital, Port Chester, New York.

51. Miss Frances H. Manning, Trustee Robert B. Brigham Hospital, Boston, Mass.

52. Miss Margaret B. Mateer, Supt. Lima Hospital, Lima, Ohio.

53. Miss Grace D. McElderry, Supt. Hackley Hospital, Muskegon, Mich.

54. Miss Florence McKinley, R. N., Asst. Supt. Miriam Memorial Hospital, 277 West Grand Blvd., Detroit, Mich.

55. Miss Harriet Meiklejohn, R. N., Supt. Mountainside Hospital, Mountclair, N. J.

56. Dr. Auton J. Moe, Supt. South Western Minnesota Hospital, Heronlake, Minn.

57. Vincenz Mueller, Tech. Editor "Modern Hospital," 327 East Ave., Oak Park, Ill.

58. Dr. Geo. P. Muller, Hosp. Surgeon, Polyclinic Hospital, 1729 Pine St., Philadelphia, Pa.

59. Mr. Charles H. Olmstead, Trustee Robert B. Brigham Hospital, 74 Green St., Brookline, Mass.

60. Mr. Robert Olyphant, President Hospital Saturday and Sunday Association, 17 Battery Place, New York City.

61. Miss Blanche O. Palmer, Hotel Monnett, Evanston, Ill.

62. Dr. R. K. Packard, Supt. Washington Park Hospital, 437 East 60th St., Chicago, Ill.

63. Mr. Fred Paulson, Trustee Norwegian Lutheran Deaconess Hospital, 2312 15th Ave., So. Minneapolis, Minn.

64. Mr. U. K. Pettingill, Trustee Robert B. Brigham Hospital, 53 State St., Boston, Mass.

65. Miss Elizabeth Phillips, Supt. of Nurses City Hospital, Saskatoon, Sask.

66. Mr. Chas. O. Read, Trustee Memorial Hospital, 63 Summit Ave., Pawtucket, R. I.

67. Mrs. James H. Reed, Trustee Children's Hospital, Pittsburgh, Pa.

68. Miss Minnie D. Rhodes, R. N., Supt. Owatonna Hospital, Owatonna, Minn.

69. Dr. C. M. Roan, Trustee Norwegian Lutheran Deaconess Hospital, Minneapolis, Minn.

70. Dr. E. C. Robitshek, Surgeon, Eitel Hospital, Minneapolis, Minn.

71. Miss Mary Rostance, Supt. of Nurses Hamot Hospital, Erie, Pa.

72. Dr. Annie H. M. Sharpe, Supt. North Chicago Hospital, Chicago, Ill.

73. Mr. Thos. Simpson, President White Plains Hospital, Hartsdale, New York.

74. Miss Elizabeth Smith, Supt. St. Luke's Hospital, 71 Park Place, St. Paul, Minn.

75. Mr. John F. Souther, Trustee Robert B. Brigham Hospital, 606 Tremont St., Paddock Bldg., Boston, Mass.

76. Miss Ella M. Steinbach, Supt. People's Hospital, Peru, Ill.

77. Miss Anna C. Struckmeyer, Supt. King's Daughters Hospital, Greenville, Miss.

78. Dr. Thomas L. Sullivan, Supt. Indianapolis City Hospital, Indianapolis, Ind.

79. Miss Mary B. Turpin, R. N., Supt. Knowlton Hospital, Columbia, S. C.

80. Dr. G. Woodruff Vannatta, Asst. Supt. New York Hospital, New York City.

81. Mr. Paul A. Vik, Supt. St. Luke's Hospital, Fargo, N. D.

82. Charles Eliot Ware, Trustee Burbank Hospital, 745 Main St., Fitchburg, Mass.

83. Mr. J. J. Weber, Executive Secretary State Charities Aid Association, 105 East 22d St., New York City.

84. Miss Roberta M. West, Supt. of Nurses Philadelphia Hospital for Contagious Diseases, Philadelphia, Pa.

85. Dr. Charles Edward Zeigler, Medical Director Elizabeth Steel Magee Hospital, Pittsburgh, Pa.

86. Dr. G. Walter Zulauf, Asst. Supt. New York Hospital, New York City.

87. Miss Alma E. Grant, Supt. Cambridge Hospital, Cambridge, Mass.

88. Ella A. Lawrence, R. N., Supt. Cumberland Street Hospital, Brooklyn, New York.

89. Dr. J. G. McKay, Acting Supt. Provincial Mental Hospital, New Westminster, B. C.

90. Mr. Nathaniel T. Kidder, Trustee Massachusetts General Hospital, Boston, Mass.

91. Miss Hanna Kouf, Night Supt. Robert Packer Hospital, Sayre, Pa.

92. Miss Helen Moir, R. N., Supt. Telfair Hospital, Savannah, Ga.

93. Miss Annie M. Coleman, R. N., Inspector Schools of Nursing, Oakland Building, Lansing, Mich.

94. Dr. Bertha Van Housen, Physician, Mary Thompson Hospital, 4845 Calumet Ave., Chicago, Ill.

95. Miss Grace E. Crawford, Supt. of Nurses North Western Hospital, Moorhead, Minn.

96. Dr. N. P. McGay, Asst. Supt. Out-patient Department of Charity Hospital, 906 East 105th St., Cleveland, O.

97. Sister Marie Ephram, Supt. St. Joseph's Hospital, Sudbury, Ont.

98. Dr. George E. Darby, Bella Rivers Inlet Hospital, Bella Bella, B. C.

99. Agnes H. Collins, Supt. of Nurses Mount Zion Hospital, 2200 Post St., San Francisco, Cal.

100. Dr. Dora I. Dom, Pathologist Mount Zion Hospital, San Francisco, Cal.

101. Dr. J. H. McLelland, Medical Supt. Mt. Zion Hospital, 2200 Post St., San Francisco, Cal.

102. Miss Caroline L. Butterfield, Supt. Finley Hospital, Dubuque, Iowa.

103. Dr. George Gartly, Surgeon Gartly & Rawson Hospital, Memphis, Tenn.

104. Miss L. J. Napier, Supt. City Hospital, Springfield, Ohio.

105. Mr. C. M. Wollenberg, Supt. City and County and Relief Home of the Aged and Infirm, San Francisco, Cal.

106. Sister M. Romana, Supt. St. Joseph's Hospital, 710 Penn St., Kansas City, Mo.

107. Mr. Geo. B. Lauders, Asst. Supt. Presbyterian Hospital, New York City.

108. Dr. Annie H. M. Sharpe, Supt. North Chicago Hospital, 2551 N. Clark St., Chicago, Ill.

109. Miss Margaret J. Robinson, Supt. Burlington Hospital, Burlington, Iowa.

110. Miss Nina Lee Phillips, R. N., Asst. Supt. Burlington Hospital, Burlington, Iowa.

111. Dr. John J. Dowling, Supt. Boston City Hospital, Boston, Mass.

112. Mr. Clarence A. Graves, Supt., 1012 Maxwell St., Chicago, Ill.

113. Dr. A. C. Bachmeyer, Supt. Cincinnati General Hospital, Cincinnati, Ohio.

114. Miss Phia Janet Lund, Supt. The Municipal Hospital, Prince Albert, Saskatchewan, Sask.

115. Miss Huberta M. Coulter, Night Supt. Jewish Hospital, Cincinnati, Ohio.

116. Miss Catherine Rebman, Asst. Supt. C. H. Buhl Hospital, Sharon, Pa.

117. Mr. George B. Bassett, Trustee Buffalo Homeopathic Hospital, Buffalo, N. Y.

118. Miss Fanny F. Pickup, R. N., Supt. of Nurses Georgia Baptist Hospital, 92-98 Luckie St., Atlanta, Ga.

An Appeal for Larger Membership

The officers of the American Hospital Association are making an effort to enlist a larger body of hospital workers, superintendents, trustees, medical men, and superintendents of nurses in the work of the Association.

About five thousand circulars have been mailed to hospitals, sanatoriums and dispensaries throughout the country at present not represented on the membership list of the Association. The directory of hospitals of the United States and Canada gives a list of over six thousand hospitals, sanatoriums and dispensaries for the care of the sick. The present membership of the Association is about twelve hundred. It would seem that at least half the hospitals of the country should be represented in the Association. The members are urged to solicit personally superintendents of hospitals in their vicinity to become members of the greatest hospital organization in the world. Superintendents of hospitals already members of the Association are requested to see that their boards of trustees are represented by one or two members. We need the support of boards of trustees of all the hospitals.

The members are requested to write the secretary for blanks and enlist the interest and support of their boards and superintendents of neighboring hospitals.

Non-Commercial Exhibit

The hospital administrators of the country should all try to make an exhibit of something that they have designed for use in their hospitals in connection with the Non-Commercial Exhibit of the American Hospital Association in San Francisco. Miss Lydia H. Keller, of Northfield, Minn., who has charge of the Exhibit, is working very hard to get up an exhibit that will be worth while and instructive for the hospital people.

Exhibits should be addressed to Miss Lydia H. Keller, Hotel Inside Inn, Exposition Grounds, San Francisco.

Isthmian Canal Workers' Dinner

The meeting and dinner of the Medical Association of the Isthmian Canal Zone will take place at the University Club, on the corner of Powell and California Streets, San Francisco, at 7:15 p. m., Thursday, June 24, 1915.

Physicians who have been or are now connected with the organization on the Canal Zone are requested to write to Dr. H. T. Summersgill, Superintendent, University of California Hospital, San Francisco, California, and notify him if they intend to be present at this dinner. All acceptances must be received on or before June 19.

CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General United States Army.

The Psychic Factor in Ventilation. Editorial New York Med. Jour., Feb. 13, 1915.

Ventilation has led sanitarians a long will-of-the-wisp chase. Air has been let into rooms at the top and let out at the bottom and vice versa; driven in at one end and sucked out at the other, and vice versa; and each method has been highly commended by someone interested in the selling of certain apparatus. Air deflectors and revolving fans and blowers have been installed, all with "good results." Windows have been opened at the top, at the bottom and in the middle, and window tents have been devised; windows have been removed and walls abandoned, and still the problem of ventilation is with us. Principals of schools have found their pupils able to do a maximum amount of work with the ventilation conducted in one way and another principal has found that his pupils do better with another form of ventilation. There is ventilation with moisture and ventilation without moisture, and with a moderate amount of moisture. Re-breathing has been interdicted and forbidden by sanitarians and hygienists, and yet the wild animal in cold weather buries its nose in the depths of its furry coat and the man on the sleeping porch keeps his head under the blanket and both survive and flourish.

In other words, the writer thinks the psychic element enters largely into the problem of ventilation and that the only real thing that stands out as of permanent moment is temperature and cleanliness, and the writer thinks that progress will be made in the solution of ventilation problems if we give more attention to the regulation of the temperature of the air, to the age, condition and activities of the persons who are to occupy the room.

The writer rather discounts the scientific work that has been done on air problems, especially in schools and hospitals.

The First Aid in Pulmonary Hemorrhage for Hospital and Sanatorium Patients. Helen B. Trier, R. N., Director of Nurses Cook County Tuberculosis Hospital, Oak Forest, Ill. Jour. Out-Door Life, Jan., 1915.

Miss Trier shows pictures of what she calls a "hemorrhage" basket and its contents, which include:

One rubber bib, two towels, two pus basins, one ice cap, one bowl (for chipped ice), one teaspoon (for chipped ice), one ice pick, one jar cotton pledgets, one bottle alcohol (4 oz.), one bottle sterile water, one hypodermic syringe, three hypodermic needles (aseptic), wires for hypodermic needles, nitroglycerine tabs. gr. $\frac{1}{100}$, atropine sulfate gr. $\frac{1}{150}$, morphine sulfate gr. $\frac{1}{4}$, pituitrin, box amyl nitrite perles, thirty-six gauze squares 3 x 6, sol. magnesium sulfate, glass drinking tube, one 6-lb. paper bag.

She gives directions as to how the nurse shall conduct first aid in the case of a pulmonary hemorrhage. In the Oak Forest Sanatorium, with a capacity of 600, she finds it necessary to have a number of these baskets placed

throughout the institution, with the location of each familiar to all the nurses. The hemorrhage basket has now been made a part of the regular equipment of the tuberculosis hospital, and in Miss Trier's experience it has been found extremely helpful as supplying, in one container, all

Basket for use in pulmonary hemorrhage.

the supplies ordinarily necessary in the treatment of hemorrhage. A technic has been established, and not the least advantage of the use of this appliance and the technic is the psychic effect on the patient, which is always reassuring and comforting. The baskets that Miss Trier uses were made from willows gathered on the grounds of the sanatorium and woven by a patient.

Some Perils Confronting State Care of the Insane. Chas. P. Bancroft, M. D., Superintendent State Hospital, Concord, N. H. Boston Med. & Surg. Jour., Feb. 18, 1915; a paper read before the Boston Society of Psychiatry and Neurology.

The chief point in Dr. Bancroft's paper is a protest against the growing custom in this country of directing the operations of state hospitals and other eleemosynary institutions through salaried central boards of trustees appointed by the political power. Dr. Bancroft thinks the old custom of conducting these institutions, under the auspices of volunteer boards of the citizens of the community in which the institution is located, is far the best plan, because these boards are made up of citizens who will be directly interested in the work for the work's sake, and who, being members of the social community in which the institution is located, will be closer to its interests and give greater attention to details of its management. He objects to salaried central boards, usually located at state capitals, for several reasons: (1) that their interests are very vague and their knowledge of the affairs of the institutions very superficial because they are not located where they can be in intimate contact with its activities; (2) usually these boards, being political in character, do not have women members, and he thinks that woman's influence on boards of this character stimulates sympathy and humanity; (3) he thinks that the political complexion of these salaried boards causes a loss of interest in the work that the institutions are doing, and that these boards, usually created by virtue of political preferment, are more concerned with the political "plums" than they are with the efficiency of the institutions under their charge; (4) he doubts the efficiency of central purchasing boards such as usually go with state charity commissions; he thinks that the purchasing of supplies for a hospital is not identical with the purchasing for a railroad or a commercial organization, and that the character of the goods used in hospitals, the dangers of deterioration, and the expense of storage and distribution, militate against centralized purchasing agencies.

The article goes into a good deal of detail in the arguments along these various lines and is most interesting in its accounts, by way of illustration, of what various institutions are doing.

The Organization of an Antityphoid Vaccination Service in the Military Hospitals at Vichy (L' organisation d' un service antityphique dans les hôpitaux militaires de Vichy). Bulletin Acad. de médecine, Paris, 1914, LXXII, No. 42.

The antityphoid vaccination practiced in the American army, which had such good results during the concentration of troops in Texas, has also been introduced into the European armies, especially in Germany, where this prophylactic measure is carried out systematically in all the armies of the western front. In France, too, this subject receives considerable attention. To prevent the spread of typhoid fever at the famous watering place of Vichy, all the soldiers coming from the front suffering from typhoid fever are placed together in a special hospital containing about 400 beds. In all the other hospitals of Vichy the wounded soldiers are treated with the antityphoid serum, as soon as their condition permits it, to prevent infection of the nurses and the other wounded. This is considered an important prophylactic measure, as the greater part of the wounded return to the front. The nurses and all the employees of the Vichy hospitals have likewise to submit to antityphoid vaccination.

Ya-li, Yale in China, an American College Hospital and Training School. (Editorial) Nurse, Jamestown, N. Y., 1915, II, 107.

The editor believes "cosmopolitanism" is one of the advantages of the larger universities, and that the presence of numbers of students and instructors from foreign countries exerts an influence that carries the educational policies of the larger seats of learning outside of national limits. As a result of this cosmopolitan spirit some of our universities have established branch colleges in foreign countries, particularly in the East. In nearly every instance where it has been done under American auspices, the hospital, the medical school and the nurse training school have been the entering wedge by which the new institution has acquired a hold over the prejudices of the people. Yale men planted a school-college at Changsha, Hunan province in mid-China several years ago, and in 1907 began dispensary and hospital work. The plant was called "Ya-li," which converts the New Haven idea into the Chinese language, and brings to the fore one of those honorifices dear to the Asiatic mind—"The College of Elegant Proprieties." The register shows 140 students in the school and college. A freshman class now exists and will be carried to graduation, when a full college organization will be complete and permanent. Each year men are sent out from Yale to join the staff of teachers. The institution is designed to take care of the higher education of Hunan province, the mission and government schools of which have 22,000,000 people as feeders to Ya-li. According to Chinese custom, where the two must be quite distinct, the men's training school and male patients were assigned to the Red Cross Hospital, which in return received the assistance of the staff of physicians and organized nursing department of Yale. There are 85 beds at the Red Cross Hospital, with an active medical and surgical service, both public and private, so that the nurses get good experience in all sorts of work. Yale Hos-

pital is, therefore, free for the women's school, and there are now 37 beds for women, with an active surgical service, and as many obstetrical and medical cases as we can expect from Chinese women in Hunan at present. Of the forty students present at the opening of the school December 1, 1913, one was a Cantonese who had received excellent training in the University of Pennsylvania Hospital in Canton.

The Modern Treatment of Epilepsy. Dr. A. Zurich, Director of the Swiss Institute for Epileptics. The Medical Times, April, 1915.

The author has entirely reconstructed his conduct of the institution over which he presides. He finds it no longer necessary to make special provision for patients, low beds, fixed furniture, padded walls and floors, etc., and since the introduction of the new treatment in 1911, 25.3 percent of the patients were freed from seizures altogether, and in 48.7 percent decided and lasting improvement was obtained.

The treatment comes under the head of bromide therapy, but in addition there is almost complete withdrawal of common salt from the food. Sedobrol tablets of the following formula are employed, sometimes in bouillon and at other times in tablet form:

Each tablet weighs 2 grammes, and contains 1.1 gramme sodium bromide, 0.1 gramme sodium chloride; extractives of vegetable albumin as spice and fat (in place of creatin and creatinin, which are harmful to the cortex) are included in negligible quantities.

The author gives many details of the method of employment, gives a number of case histories with results, and points out clearly the dangers and preventives of bromism.

The Modern Hospital. H. P. Bosscha. Het Ziekenhuis, Amsterdam, 1915, Vol. VI, No. 2.

Het Ziekenhuis, a monthly journal devoted to the promotion of economy and efficiency of hospital construction, equipment and management, has entered on its sixth year of excellent service to the hospitals of Holland and her colonies. In the above number Mr. H. P. Bosscha, of the editorial staff, calls attention to the necessity of alert hospital officials and administrators keeping in touch with progress in every corner of the globe. Casting his glance across the Atlantic, he recommends to his readers THE MODERN HOSPITAL as a periodical that is fast outdistancing the best journals of England, Germany and Holland. Several leading articles that have appeared during the past year in THE MODERN HOSPITAL are abstracted, and in giving them unstinted praise, Mr. Bosscha adds that the monthly "Hints for Hospital Superintendents" deserve equally careful perusal, inasmuch as they contain matter of extreme value to superintendents throughout the world.

The writer refers to the advertising pages of THE MODERN HOSPITAL as "works of art," entirely devoid of "bad taste" or "humbug." He marvels at the energy displayed in securing contracts in such numbers and contrasts the "drab stereotyped advertisements" of Europe with the "beautifully illustrated pages" of THE MODERN HOSPITAL. The frequent change of copy is noted as beneficial both to the advertisers and the institutions—Mr. Bosscha pointing out that "only good could come to both Het Ziekenhuis and its advertisers by following this excellent example."

Our colleague concludes a two-page, most flattering analysis of THE MODERN HOSPITAL from cover to cover by again reiterating that, in spite of the good work being done in the hospital field of Holland, excellent material can be gleaned from a perusal of the pages of THE MODERN HOSPITAL.

An Egyptian Hospital Train. Captain L. B. Crane. St. Bartholomew's Hospital Journal, Vol. XXII, No. 7.

Captain Crane contributes an interesting description of the first Egyptian Red Crescent Train in use during the present war. This train is composed of ten coaches, five of which are ward cars for the soldiers, while the remainder include accommodation for sick officers, doctors, nurses and orderlies, and an operating theater, dispensary, dining car, kitchens, cupboards and stores. There is accommodation for ten officers, 96 men, two doctors, four nurses, two assistants and eight orderlies. Each ward car contains twenty bunk beds in double lines on each side of a central corridor.

No money has been spared in making these trains complete with every convenience, and every luxury that might be appreciated by the sick and wounded or those who travel in charge of them. One coach has been adapted for the use of the medical and nursing staff. In this are comfortable sleeping cabins, each fitted with washstand, hot and cold water, mahogany wardrobe and chest of drawers; a bath room with shower bath; separate kitchen and scullery and quarters for attendant; and last, but not least, a snug dining and sitting room with lounge seat, wicker armchairs and a table.

Transport of Sick and Wounded. Special Number of The Hospital, London, 1915, Vol. LVIII, No. 1504.

In spite of the difficulty of obtaining first-hand information of any kind from the front during the present war, The Hospital has succeeded in giving its readers a graphic description of the whole complex organization by which the wounded are transported from the trenches to the doors of the English hospitals. The articles were written by those actively engaged in the superintendence of the work at all the main points in the long chain of transit. Among the articles of chief interest should be mentioned the following: "The Feeding and Comforts of the Wounded During Transit"—a review of the supplies organizations—by Sir George Beatson, K. C. B., chairman of the Scottish branch of the Red Cross; "Life and Procedure on a Hospital Ship"—the oversea transport of the wounded—by a lieutenant in the Royal Army Medical Corps serving on board the Ambulance Ship St. David; "The Organization of a Red Cross Train"—the transit by rail—by an R. A. M. C. officer in charge; and "Organizing a Voluntary Aid Detachment"—the last link in the transport service—by Mr. A. W. Faire, County Director of the Volunteer Aid Detachments, Leicester. An account of a "Red Cross Field Kitchen," which plays an extremely important role at the front, is also of interest. Another article dealing with "The Legal Status of the Hospital Ship" is very apropos now that the force of international law is daily in question. Thus the stretcher work, the ambulance, the ship, the train and some account of the rest stations are authoritatively and graphically dealt with.

Rubber Floors in Hospitals (Rubber-Vloeren in Ziekenhuizen). H. P. Bosscha. Het Ziekenhuis, Vol. VI, No. 2.

Several English hospitals were recently presented with a special floor covering by the Rubber Growers' Association. This is being tried out in the corridors, as runners in the wards, and in some of the operating rooms. The writer reviews the advantages and disadvantages of hardwood, cement, tile and linoleum covered floors in hospitals, none of which he finds ideal; calls attention to the extreme durability of rubber floor covering so extensively used in hotels, on ships, etc., and questions whether, in spite of the high cost, more use should not be made of it in our hospitals.

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DEPARTMENT OF NURSING

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Urine Analysis for Nurses

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Definition. Urine is a watery fluid secreted by the kidneys. In health it contains a large variety of constituents derived from the breaking down of the fluids and tissues of the body from certain elements of the food.

Secretion. There are two theories: First, that of Ludwig, who regards the kidneys essentially as filters through which the waste products pass from the blood out of the body. He regards the process purely as a physical one, depending on the principles of diffusion or osmosis, this process taking place in the tubules of the kidney.

The second theory is that of Bowman-Heidenhain, according to whom the kidney is essentially a secreting gland and the urine a mixture of certain characteristic elements, as urea, water, salts, etc., which are secreted by the epithelial cells of the urinary tubules. According to Bowman, the glomeruli are filters for water and inorganic salts and the tubules true secretory structures for urea and related bodies. This is a physiological action. The best proof of this is that when the epithelium of the tubules is destroyed by disease certain toxic products are retained in the blood, causing uremia, while the urine is more watery and contains a smaller percentage of its characteristic solids. Under pathological conditions the abnormal constituents, such as albumin in albuminuria, hemoglobin in hemoglobinuria, and sugar in glycosuria, seem to escape from the blood into the kidney through the glandular epithelium.

The Mechanism of Excretion. Four factors are concerned in the mechanism of excretion: kidneys, ureters, bladder, and urethra. The kidneys secrete urine constantly into the ureters, which discharge their contents into the bladder by a series of spurts, the muscular contractions beginning at the kidney and going in waves to the bladder.

As the bladder fills, muscular contractions set up, forcing a few drops of urine into the urethra. These act as stimulæ to the nerve cells in the lumbar region of the spinal cord and the person is conscious of the desire to urinate.

Properties of Normal Urine

The chemical composition is very complex. It contains the end results of varied metabolism of the body. Its importance in this respect is greater than the other excretory organs, as the lungs, skin, and intestines. The 24-hour amount in an adult is 1,200 to 1,600 cc. The average is 1,500 cc., or 3 pints. Women pass smaller quantities than men. Small-sized persons void less than large-sized individuals. Drinking of much liquid increases the amount, while free perspiration diminishes the average amount; considerably smaller quantities are passed in warm weather than in cold.

Oliguria: A diminished quantity.

Anuria: No urine, or a very small quantity, as in partial or complete suppression.

Polyuria: Markedly increased quantity.

Hydruria: An increased proportion of the watery constituents.

Directions for Collecting Urine

1. Have two clean quart jars.

2. Pass the urine at 7:00 a. m., throw this specimen away; then save in the jars all urine passed until 7:00 a. m. the next day, including that passed at 7:00. Mix and measure. A pint will do for laboratory examination. In suspected nephritis separate day and night portions.

Methods of Collecting Urine

(ADULTS)

1. Heat in form of hot compresses, or hot water bottle over bladder.

2. Enema. With this method the urine is usually lost in the female, but can be saved in the male.

3. Allow patient to sit up.

4. Auto-suggestion. Allow patient to hear running water from a tap.

(INFANTS)

1. Warm cup or bowl under buttocks, with pressure over pelvis, when infant wakes and has a dry diaper.

2. Try suggestion number one when giving a bottle, for it is customary for an infant to urinate when feeding, or directly after.

3. A test tube may be strapped on the parts with adhesive plaster.

Color. Due to pigments. Normal color is a clear, pale yellow, with straw or amber tints, but in health it may vary considerably according to the amount of water drunk. Dilute urines are usually pale, concentrated urines deeply colored. Color is not a very trustworthy sign in urine examination.

On standing and on cooling a normal urine, as a rule, precipitates—first, amorphous urates which appear as an indefinite, feathery cloud, then uric acid crystals, and sometimes calcium oxalate crystals.

If allowed to stand open, exposed to high temperature, the urine becomes clouded from the large number of bacteria and fungi. At the end of a few days it becomes ammoniacal—the urea changing into ammonium carbonate. Then the urine grows alkaline and the sediment contains ammonium urates, triple phosphates, and amorphous masses of calcium phosphate. This is known as alkaline fermentation.

Acid fermentation may occur, in which there is an increase in acidity, darkening in color, deposition of uric acid and urates, with yeast fungi and bacteria. This change is probably caused by mucus. The most practical method of preserving urine is by the addition of one dram of a cold saturated solution of boric acid to each quart of urine.

Normal Urine. In a normal urine we often see a filmy cloud of mucus. If the urine is concentrated, uric acid salts separate out, causing a sediment which is brick-dust red or flesh color.

Continuing decomposition, ammoniacal fermentation goes on, urea changes into ammonium carbonate and phosphates are precipitated, which will disappear on addition of several drops of acetic acid.

Reaction. Urine is normally acid due to the presence of acid sodium phosphate and acid urates. Normal urine turns blue litmus paper red. The acidity varies at differ-

ent times of the day, diminishes soon after a meal and reaches its lowest point in three to four hours after meal time.

Freshly passed urine may be alkaline; that is, it will turn red litmus paper blue; this alkalinity is due to changes in the blood or stagnation in some part of the urinary tract. When urine affects neither blue nor red litmus paper, or turns blue slightly red and red slightly blue, then the reaction is said to be amphoteric.

Specific Gravity. Normal urine varies between 1.012 and 1.024, averaging 1.020 at 60° Fahrenheit—due to solids, salts, and urea.

Odor. Normal urine has a peculiar aromatic odor. It may be affected by eating certain kinds of vegetables, notably asparagus and garlic. When alkaline fermentation takes place, we have the development of ammonia with its known pungent odor.

Sugar or Glucose. Present in such small amounts in normal urine that it can be disregarded.

Albumen. Ordinarily not present in health.

Urea. Dependent on the amount of albuminous food taken, and is derived from the metabolism of the proteids. It varies with the amount and composition of the food and with the rapidity of tissue waste in health and disease.

Inorganic Salts. The chlorides are most important, mostly existing as sodium chloride, and small amounts are combined with potassium and ammonium, varying greatly with the kind of food. The chlorides are diminished in all acute processes.

The Function of the School Nurse

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The school nurse is now almost universally admitted to be one of the most necessary adjuncts of a well developed system of medical inspection. The total number employed in American cities in 1911, according to an investigation, was 415, of whom 375, or 90 percent, were in the North Atlantic and North Central states. Their distribution in the different divisions was as follows:

Division	Cities having systems of medical inspection	Cities employing school nurses	Number of nurses employed
North Atlantic	236	52	261
South Atlantic	23	5	11
South Central	35	4	5
North Central	109	28	114
Western	40	13	24
United States	443	102	415

Increasing attention is being paid in American schools to the inspection of children's teeth, and the work is being more and more commonly carried on as a branch of medical inspection in a semi-independent way. In a number of the large cities the local dental associations have established clinics at which school children are given treatment either gratis or at small expense. In most of these cases dentists serve without remuneration, but in a few cities they have been added as regularly paid members of the corps of medical inspectors. Sixty-nine cities had dental inspection conducted by dentists in 1911, and of these 54, or 78 percent, were in the North Atlantic and North Central states.

Medical inspection is provided for by law in something less than half of the American states. Regularly organized systems of medical inspection are in force in something less than half of the American cities, while a beginning has been made in nearly three-fourths of them. About four-fifths of the 443 cities having systems of medical inspection employ school physicians, almost a quarter of them employ school nurses, and in about one city in seven school dentists are employed.

The value of the school nurse is the one feature of medical inspection of schools about which there is no division of opinion. Her services have abundantly demonstrated her utility, and her employment has quite passed the experimental stage. The introduction of the trained nurse into the service of education has been rapid, and few school innovations have met with such widespread support and unqualified approval.

The reason for this is that the school nurse supplies the motive force which makes medical inspection effective. The school physician's discovery of defects and diseases is of little use if the result is only the entering of the fact on the record card or the exclusion of the child from school. The notice sent to parents telling of the child's condition and advising that the family physician be consulted, represents wasted effort if the parents fail to realize the import of the notification or if there be no family physician to consult. The nurse converts these ineffective lost motions into efficient functioning by assisting the physician in his examinations, personally following up the cases to insure remedial action, and educating teachers, children and parents in practical applied hygiene.

The functions of the school nurse are most varied in different communities, and include duties which range from the reporting of cases of truancy to diagnosing contagious diseases—two extremes, neither of which properly falls within the purview of her work. In general, her duties may be concisely summarized as follows:

1. In the school:

(a) Making routine examinations of children to detect those cases which should be referred to the school physician.

(b) Assisting the physician in making physical examinations and recording results.

(c) Acting in emergency cases, such as caring for accidents, bandaging cuts, removing splinters, caring for cases of fainting, convulsions, and the like.

2. In the home:

(a) Explaining to parents the significance of the notices sent by the school physician concerning the condition of their children and aiding the parents in securing remedial action.

(b) Instructing and educating parents in the practices of applied hygiene.

3. In the clinic:

(a) Assisting the physicians in treatments and operations.

(b) Leading the children to view the proceedings of the clinic as diverting experiences rather than terrifying ordeals.

The history of school nursing shows its continual extension into wider and wider fields, and its constantly increasing demands for unusual qualifications on the part of the workers. In a technical sense the work is not really nursing at all, but it calls for a skill and knowledge acquired only in the training schools for nurses, and demands in addition qualifications which can at present be secured only in the school of experience.

It is a safe rule that no school nurse should be employed who is not a graduate of a training school of recognized high standing. In addition she should have had special experience with children, of the sort that she would gain through serving on the staff of a children's hospital.

In judging the qualifications of candidates, success in district work should be given preference over length of experience. The successful school nurse is, first of all, an intermediary between physicians, teachers, parents, and

children. Permanent success requires tact above all other qualifications. No single phrase in our language adequately describes the qualification or ability referred to. It is that attribute which the Spaniards designate as the "don de gentes," which, freely translated, means the "gift of getting along with people."

Among other necessary qualifications may be mentioned activity, and ability to carry a large amount of work without worry. Any tendency to gossip should constitute sufficient cause for immediate disqualification.

Reference has been made to the value of the school nurse's work in reducing the number of exclusions on account of contagious and infectious diseases. How this operates in practice is shown by the experience of New York City before and after the organization of the corps of school nurses. In the system prevailing up to 1902 all cases of contagious and infectious diseases were excluded by the physician. If this system had continued in force the number of exclusions in 1911 would have reached a grand total of 253,738. This number is so great in proportion to the total membership of the schools that had all these children been excluded the entire school system would have been seriously disorganized. The actual number of exclusions in 1911 amounted to 8,154, or a little more than three percent of the number of cases of contagious diseases. This means that in the experience of New York City, through the employment of school nurses exclusions from school had been reduced to something like one-thirtieth of their former proportions.

While a review of reports on medical inspection in American cities shows that superintendents and medical inspectors have abundantly endorsed the work of school nurses, it is only rarely that data are found giving any sort of measure of the value of their services. Almost the only direct comparison between results accomplished with and without the cooperation of the nurses comes from the city of Philadelphia. Data bearing on the problem were presented by Dr. Samuel W. Newmayer, of that city, in a paper entitled "Evidence that the School Nurse Pays," printed in the proceedings of the Fifth Annual Congress of the American School Hygiene Association.

The first set of data presented by Dr. Newmayer shows the number and percent of recommendations acted upon in four schools where a nurse was at work, as compared with the number acted upon in four other schools where the medical inspector was unaided by a nurse. The comparison shows that with the aid of the school nurse 89 percent of recommendations were acted upon by the parents, and with the school physician without the aid of the school nurse there were only 24 percent of recommendations acted upon.

The following set of rules issued by the board of education of Newark, New Jersey, embodies most of the features that characterize the best practice in connection with the rules and instructions laid down for the guidance of school nurses. With such modifications as local conditions demand, they will be found satisfactory for use in most communities.

Rule 1. Nurses shall at all times be under the direction of the Supervisor of Medical Inspection.

Rule 2. Applicants for the position of school nurse shall submit to an oral and written examination and also to a physical examination by the Supervisor of Medical Inspection. All applicants must hold a certificate of graduation from an approved training school for nurses, having a course of not less than two years.

Rule 3. The salary of each nurse shall be, for the first year, $720; second year, $780; third year, $840; fourth year, $900, the maximum; in twelve monthly payments. In addition, each nurse shall be supplied with carfare at the expense of the Board of Education, and an outfit, consisting of a bag and supplies for treating her cases. These supplies shall be obtained on order from the Department of Medical Inspection.

Rule 4. Each nurse shall devote her entire time to the school work during the hours of service, which shall be from eight a. m. to twelve noon, and from one p. m. to five p. m. on all week days except Saturday, when the hours of service shall be from eight a. m. to twelve noon, and at other times if required by the supervisor of medical inspection in special cases. Nurses shall report to the office of the supervisor of medical inspection each morning at eight for instruction, and shall attend meetings with the supervisor of medical inspection at his call. A daily report shall be made out by each nurse on forms supplied by the department and filed in the office of the supervisor of medical inspection. Each nurse shall, on visiting a school, register her name and time of arrival and departure in the attendance book in the principal's office.

Rule 5. Nurses shall perform class-room inspection once a month, or oftener if directed by the supervisor of medical inspection. Nurses shall refer all cases of suspected disease or defect, except pediculosis, to the medical inspector for his opinion as to what shall be done. Where contagious disease is suspected, and the doctor is not in the school, the pupil shall be excluded. The name, age, address and school of pupil shall be reported immediately to the office of the supervisor of medical inspection. All other diseases and defects which are not contagious shall be brought to the notice of the medical inspector as soon as possible.

Rule 6. The nurse shall have entire charge of all cases of pediculosis and uncleanliness.

Rule 7. The diseases to be treated by the nurse are as follows: Ringworm, scabies, favus, impetigo, molluscum contagiosum, conjunctivitis, infected wounds, contusions and uncleanliness. No case of the above diseases shall be treated by a nurse without the diagnosis being confirmed by the medical inspector of the school which the pupil attends, and whenever possible, with the parents' consent. A record shall be kept of each pupil when placed under treatment by the nurse and the dates of subsequent treatment noted on forms supplied by the Board of Education.

Rule 8. It shall be the duty of the nurse to visit the homes in special cases, for the purpose of interviewing and instructing the parents or guardians. These visits shall be made before or after school hours and on Saturdays.

Cases to be visited by the nurse at home are:

(a) Flagrant cases of pediculosis. The nurse shall show the mother how to treat the conditions and encourage persistence.

(b) Excluded cases that do not return at the appointed time.

(c) The nurse shall call at the homes of any children whose parents have refused or neglected to comply with the request of the medical inspector or have not given satisfactory reason for not doing so. At this time the nurse shall urge upon the parent the need for treatment and, if necessary, demonstrate how it shall be done.

Rule 9. Practical talks on personal hygiene and home hygiene shall be given by each nurse to the pupils at such times as the supervisor of medical inspection shall specify, but not to interfere with the ordinary routine of the school.

Rule 10. Each nurse shall receive one month's vacation during the interval between the closing of the school year in June and the reopening of the schools in September, the time of vacation to be designated and assigned by the supervisor of medical inspection.

Rule 11. School nurses shall be appointed to serve for a term of one year, extending from February 1st to January 31st. In case a vacancy occurs, same shall be filled for the unexpired term only.

The salaries of school nurses in American municipalities range from $500 to $1,500 per annum, and the study made in 1911 shows that the average nurse receives from $701 to $800 per annum, and that the average salary would be $700 per annum.

It is a safe rule that no municipality should expect to secure the services of competent women of the right type for less than $75 per month. In addition, provision should be made for increases based on satisfactory services and higher salaries for those doing supervisory work.

To sum up the case for the school nurse: she is the teacher of the parents, the pupils, the teachers and the family, in applied practical hygiene. Her work prevents loss of time on the part of the pupils and vastly reduces the number of exclusions for contagious diseases. She cures minor ailments in the school and clinic and furnishes efficient aid in emergencies. She gives practical demonstrations in the home of required treatments, often discovering there the source of the trouble, which, if not discovered, would render useless the work of the medical inspector in the school. The school nurse is the most efficient possible link between the school and the home. Her work is immensely important in its direct results and far-reaching in its indirect influences. Among foreign populations she is a very potent force for Americanization.

Unnecessary noise is the most cruel absence of care which can be inflicted either on sick or well. For, in all these remarks, the sick are only mentioned as suffering in a greater proportion than the well from precisely the same causes.

A good nurse will always make sure that no door or window in her patient's room shall rattle or creak; that no blind or curtain shall, by any change of wind through the open window, be made to flap.

Variety of form and brilliancy of color in the objects presented to patients are actual means of recovery.

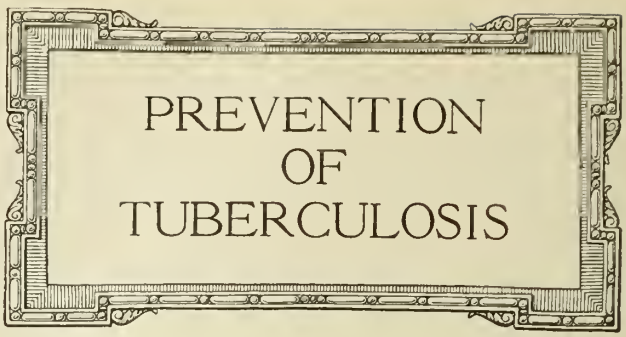
But it must be *slow* variety; e. g., if you show a patient ten or twelve engravings successively, ten-to-one that he does not become cold and faint, or feverish, or even sick; but hang one up opposite to him on each successive day, or week, or month, and he will revel in the variety.

I think it is a very common error among the well to think that, "with a little more self-control," the sick might, if they choose, "dismiss painful thoughts" which "aggravate their disease," etc. Believe me, almost *any* sick person who behaves decently well exercises more self-control every moment of his day than you will ever know till you are sick yourself. Almost every step that crosses his room is painful to him; almost every thought that crosses his brain is painful to him; and if he can speak without being savage, and look without being unpleasant, he is exercising self-control.

FLORENCE NIGHTINGALE.

To district nurses, then, belong the highest privileges a nurse can claim—to nurse the sick back to health; to cheer and brighten the homes of the poor; to comfort the fatherless and the widow; to ease the dying, and to perform the last nursing duties required by the dead. But it is not so easy to summarize the sympathy and love which render the visit of the nurse the brightest spot in the day, not only to the patient, but to the patient's friends.

MRS. DACRE CRAVEN.



Conducted under the auspices of
THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

When Is Fresh Air?

To the anti-tuberculosis campaigner the significance of the recent work of the New York State Commission on Ventilation in determining definitely and scientifically why air is bad cannot be overestimated. Theories have been put forward and more or less scientific claims have been made for years that air was bad only when it was stagnant; or when it had an excess of carbon dioxide, humidity, or of some other physical or chemical property; or when it was lacking in oxygen; and so on.

Now we know from careful experimentation under specially controlled and normal conditions that none of these things are in themselves bad in the air, but that an excessive amount of heat or an undue accumulation of chemical properties are two causes, at least, of bad air. Other causes may be discovered later, but these we know about. The following general conclusions summarize the work of the Commission on these and other points:

"A very high room temperature such as 86 degrees F. with 80 percent relative humidity produces slight but distinct elevation of body temperature, an increase in reclining heart rate, an increase in the excess of standing over reclining heart rate, a very slight lowering of systolic blood pressure, and a marked fall in the Crampton value.

"A moderately high room temperature, 75 degrees with 50 percent relative humidity, has all the effects noted above, although of course in less degree than the extreme temperature condition.

"Even the extreme room temperature of 86 degrees with 80 percent relative humidity shows no effect upon respiration, dead space in the lungs, acidosis of the blood, respiratory quotient, rate of heat production, rate of digestion, protein metabolism, concentration of the urine and skin sensitivity.

"The power to do either mental or physical work when actually working in a concentrated fashion is not at all diminished by a room temperature of 86 degrees with 80 percent relative humidity.

"On the other hand the inclination to do physical work is certainly, and the inclination to do mental work is probably, diminished by high room temperatures. So far as physical work is concerned, our tests show a decrease in actual work performed, when the subject had a choice, of 15 percent under the 75 degrees condition, and of 37 percent under the 86 condition as compared in each case with 68 degrees.

"Stagnant air at the same temperature as fresh air, even when it contains 20 or more parts of carbon dioxide and all the organic and other substances in the breathed air of occupied rooms, has no effect on any of the physiological responses listed above, nor on the power or inclination to do physical or mental work, nor on the sensations of comfort of the subjects breathing it.

"In other words, an overheated—even a moderately overheated—room (75 degrees) produces important effects upon the vaso-motor system of the body, including an increase in body temperature and heart rate and a lowering in the Crampton index and in other indices used to indicate a lessened facility of adaptive reaction on the part of the vascular system. These changes were accom-

panied by marked discomfort and a decrease in the amount of physical work performed. Still more recent experiments carried out under the direction of Dr. James Alexander Miller, of the Commission, have confirmed and extended the investigations of Leonard Hill on the effect of overheated air in promoting congestion of the membranes of the nose, which is believed to be an important factor in promoting bacterial infections of the respiratory tract.

"On the other hand, air containing an excess of carbon dioxide as well as all the other chemical constituents imparted to the air of a closed space as a result of human occupancy had no effect on any of the physiological or psychological criteria mentioned above. It did not diminish efficiency and it caused no discomfort."

Professor C. E. A. Winslow, chairman of the Commission, commenting on this work for The National Association for the Study and Prevention of Tuberculosis, says:

"These experiments indicate that fresh air is needed at all times and in all places. While we have changed our ideas as to what causes bad air, ventilation is just as essential to remove the heat produced by human bodies as it was once thought to be to remove the carbon dioxide produced by human lungs, and it is now proved also to be essential for carrying away chemical products which exert a measurable effect upon the appetite for food. People who live and work in overheated and unventilated rooms are reducing their vitality and rendering themselves an easy prey to all sorts of diseases, such as tuberculosis, pneumonia, grippe, etc."

Smoke and Health

While the soot from coal smoke has been found to have germicidal properties, the general effect of an undue amount of smoke in the atmosphere is harmful. These are the conclusions of Dr. W. L. Holman, of the Pittsburgh Pathological Laboratories, in an article giving an account of some studies along this line in the May number of the Journal of the Outdoor Life.

Coal smoke is made up of particles of incompletely burned coal and a number of gases arising from the combustion, which indicates a waste, since properly stoked fires do not smoke. These sooty particles floating in the air become the centers of tiny envelopes of water, formed by the condensation of the aqueous vapor of the atmosphere when the temperature falls. The more numerous the particles in the air under such conditions, the denser will be the fog or mist which they form, and when they become too heavy they fall as rain. While smoke doesn't afford the only source of supply for the building of fogs, it is a great accelerator, as is evidenced by conditions in London or Pittsburgh.

Pittsburgh on a foggy day.

Pittsburgh on a clear day.

"Now, fog has two bad effects on health," says Dr. Holman. "First, it prevents the air of our cities from becoming properly mixed with the fresh outside air; and second, it holds irritating gases, which also come from the burning coal, within the breathing zone, and it makes the temperature higher in summer by interfering with the radiation of heat from our streets and buildings, and lower in winter by cutting off the sun's rays. All these conditions have very marked effects on health. Breathing impure air lowers our general resistance, and the irritating gases, by directly acting on the air passages, make more easy the entrance of bacteria. Acute infections of the nose, throat and lungs are more common in smoky cities than elsewhere and increase during periods of foggy weather.

"The second bad effect of fog comes from interference with the sun's rays. Sunlight is our best and most constant germicide. Smoke clouds and fogs allow only the red rays to pass through, as you see it in the familiar red sun. They prevent the passage of the blue and violet rays, and it is these rays that are most active in destroying bacteria. Thus we magnify the chances of infection by lowering our resistance through the breathing of impure and irritating air, and then we interfere with the natural disinfecting action of the sunlight."

Announcement has been made of the engagement of Miss Erceldean Freeman, for several years a nurse at St. Luke's Hospital, Chicago, to Dr. H. L. Crane, of Lead, S. D. Recently Miss Freeman has been employed as superintendent of nurses at the Homestake Hospital at Lead, where her father, Dr. J. W. Freeman, is in charge. Dr. Crane is Dr. Freeman's assistant.

PREVENTION OF BLINDNESS

MATERNITY

Conducted by CAROLYN CONANT VAN BLARCOM, R. N.,
Secretary National Committee for the Prevention of Blindness;
Chairman Committee on Infant Welfare, National
Organization for Public Health Nursing.

Ophthalmia Classes in New York Schools

ANNA I. VON SHOLLY, M. D.

Special classes for the segregation of public school children suffering from infectious eye diseases have been under trial for three years in New York City. They were started in October, 1912, under the joint jurisdiction of the New York Health Department and the Department of Education. As far as I have been able to learn, from an inquiry into a large number of cities in the United States, Canada and Europe, these classes are the only ones of their kind. The nearest approach to them are the resident ophthalmia schools for the Poor Law children in Brentwood and Swanley, England.

For purposes of administration, the infections to which school children are prone are divided into two classes: the major, like scarlet fever, measles, diphtheria, etc., which run a fairly acute course and are more actively contagious; and the minor, which tend toward chronicity and are less contagious or not at all so under simple, easily carried out precautions. Pediculosis, contagious skin diseases like impetigo, scabies, favus, ringworm, etc., and the eye infections, conjunctivitis, trachoma, etc., come under the second heading. From the nature of the disease, in the first class of infections, exclusion from school is mandatory and at the same time usually acceptable to the family. In the minor infections, however, where the symptoms cause so little distress to the patient and are, to the child's and parent's minds, purely cosmetic, exclusion is a hardship and of uncertain value as far as resulting treatment is concerned.

In 1902, the present routine medical inspection of the New York City public school children was instituted and the school nurse introduced into the school. Such large numbers of children were found at that time suffering from these minor contagions that their exclusion from school presented a very serious problem. For example, in 1909, there were found 286,591 children suffering from minor infections; in 1910, 263,828 were reported; in 1911, 248,771, and in 1912, 254,214. Dr. S. Josephine Baker, in her last report[1] on the Division of Child Hygiene from which these statistics are taken, says: "The routine inspection[2] of the children in the classrooms resulted in the exclusion from school of large numbers of cases of the contagious eye and skin diseases. It was evident that such exclusions had a limited value and, in many instances, had a harmful effect. The diseases, being mild in character, were not considered by the parents as of sufficient importance to warrant medical treatment. As they were suffering from a contagious disease, the children were not allowed to return to school until cured. The results were that the children played in the streets with other children, thus spreading the infection, and the enforced absence from school not only interfered with their education, but often made them habitual truants." For this reason most of the skin diseases, pediculosis and most of the eye diseases were taken from the list of excludable diseases, provided the children were under treatment of doctor, dispensary, or the school nurse. "This resulted," continues Dr. Baker, "not only in marked improvement in school attendance, but demonstrated that all danger of infection could be controlled by this method and that children could remain in school without danger to themselves or to the other children." Trachoma cases were permitted to attend school, if under treatment by doctor or dispensary, but could not be treated by the school nurse. The minor infections excluded were contagious eye diseases with symptoms of acute inflammation or discharge, extensive contagious skin diseases and pediculosis with live pediculi. The above ruling cut down absenteeism extensively, but not entirely. Out of the large number of reported minor infections in 1909, 5,455 were excluded; in 1910, 4,131 were excluded; in 1911, 3,361; and in 1912, 4,716.

To take care of the great numbers of children found with eye trouble, in the same year, 1902, a free health department clinic for infectious eye diseases was opened. There are now seven of these free clinics in greater New York. The school nurse sends the child with "sore eyes" to the clinic, where he is examined, and if considered actively infectious, given a card recommending him for exclusion from his regular school. The child is not forced to undergo treatment at the health department clinic, but, whether treated by private physician or dispensary, is readmitted to his class on certification that he is cured or no longer a menace. Except in the locality of the Ophthalmia school, if the child is once excluded and absent from school with the consent of the authorities, there is no power except the parent's or child's will to urge and keep him under treatment and to make for a rapid recovery and return to school.

In 1910, at the time that the discoveries of Prowacek, Halberstadter and Greef (1907) had stimulated further investigation into the nature of trachoma, the research laboratory of the New York City health department undertook the study of this disease among the public school children. In 1902, 20 percent of our school children were reported to be suffering from so-called trachoma. As the result of the medical inspection, education and treatment, this percentage was gradually and steadily reduced to 7 percent in 1908, 6 percent in 1909, 3 percent in 1910, and about 2 percent in 1912-13-14. This 2 percent in 1912 meant 14,497 children with so-called trachoma. In addition to this, there were reported 33,875 children with conjunctivitis.[3] It is easily appreciated that there was plenty of material for study, but our work had not progressed very far when it was found that, while extensive work was easy, intensive work on the most severe and most neglected cases was not satisfactory, since, under the exclusion system, there was no control over the children. There was no way to know whether the medication prescribed was used and there was every reason to suspect that it was not, especially where it was attended with discomfort. One could not compel the child to report regularly to the clinic, and home visits occasionally brought to light children with advanced eye trouble undergoing no treatment and absent from school for a whole term or even a whole school year, as the result of exclusion.

[1]Report on the Div. of Child Hygiene, N. Y. C. Health Dept., Aug., 1913.

[2]In 1902.

[3]Conjunctivitis includes miscellaneous eye diseases, namely, styes, blepharitis, keratitis, dacryocystitis, acute conjunctivitis, etc.

It was an outgrowth of this study, therefore, that steps were taken to form school classes into which the severe ophthalmia cases could be kept segregated, treated and studied. These classes soon proved their value sufficiently to be made a permanent feature of the educational and health departments of the city.

The classes, now three years old, are located in the lower east side of the city in one of the most congested districts—78 Hester street. The building in which they are housed is a discarded public school building which has had one wing remodeled for the use of the classes and clinic. There are two classes, a junior and senior, of mixed grades, each with a capacity for twenty pupils. There are two teachers. The ground floor of the wing is a playground used in inclement weather. The first floor consists of a waiting room for patients, the clinic room and a model demonstration room. The second floor contains the two class rooms, a rest room, and a wash room, fitted out with a porcelain bubbling drinking fountain and a porcelain wash basin with a gooseneck faucet, both worked by foot levers, so that they need not be touched by the children's hands. All washing is done with running water.

Fig. 1. Model demonstration room in school, showing separate beds; and on screen, individual towels, wash cloths, combs and tooth brushes.

Three days a week a health department clinic is held in this building. All children with eye disease from some sixty adjoining public and parochial schools are sent or brought in squads by the school nurse for treatment. The children who formerly would have been excluded are transferred without delay to the infectious eye disease classes. The principals of their schools are notified by printed post card of the recommendation for transfer, and they cooperate at once.

The children retained in the special classes are treated according to the prescribed directions of the clinic doctor, twice a day, by the special nurse assigned to duty at the Ophthalmia school. Medication formerly left to the child's discretion for use at home is thus given in the school. We now *know that the child receives his treatment.* If the child absents himself from school the truant officer is sent for him.

Needless to say that the clinic is run on aseptic and antiseptic principles. All possible precautions are taken to avoid carrying infection from patient to patient. A basin of antiseptic solution is on either side of the doctor so that the hands covered by rubber gloves can easily be disinfected between patients. This is done whether there is visible secretion or not. Medicine droppers are not allowed to touch the patient's eyelids and are always dipped in an antiseptic solution before being returned to the bottles. Bluestone pencils are not used from one patient directly to another, but are immersed in alcohol for a time before being used again. Pledgets of cotton wrung out of boric acid solution, one for each eye, are given each child to catch the excess of medication and secretion. These are thrown into an enameled pail and burned later.

In addition to actually taking care of the eyes, the nurse in attendance teaches the children personal, family and social hygiene by talks, demonstrations and quizzes. In the demonstration room (furnished in simple fashion as a sanitary bedroom) demonstrations on domestic hygiene and the care of the eyes are given to the mothers. The children are taught the value of cleanliness. They are obliged to keep their hands and nails clean, and are taught not to rub their eyes with their hands or wipe them with their coat sleeves or caps. Their hands and persons are inspected daily. At the end of the school day each child washes his own desk and chair with soap and water. This is done chiefly for its educational value.

Fig. 2. Hand basin, and drinking fountain with foot levers; also individual cloths used by children to wash their desks. The children wipe their hands on paper towels.

The nurse also visits the homes of the children in the school and gives instructions to the mothers in their own homes. Printed leaflets in three languages, Italian, Yiddish and English, giving instructions on the care of the eyes, are distributed to every new patient in the clinic.

This school is unique among New York City schools in the matter of cleanliness. The clinic room, the corridors and stairs are mopped up daily. The waiting room and school rooms are wet swept daily and

Fig. 3. Five trachoma victims in one family. The disease was presumably brought home by one child, who contracted it in a kindergarten.

scrubbed three times a week. The toilets, banisters and side walls, as high as the tallest child can reach, are wiped daily with a disinfectant. The chairs and desks in the class room are washed with a disinfectant after the children have cleaned them with soap and water.

The children range from seven to sixteen years of age and are divided into two classes of mixed grades, one of the older and one of the younger children. The children's eyes are protected from strain as far as possible. All work, as far as it can be, is oral and all reading and writing of very short duration or omitted in severe cases. Regular routine grade work is not made the object of the class. Since the majority of the children spend a comparatively short time in these classes, more weight is laid on hygiene and the care of their health than on the three R's. Such work as is given is rather for the purpose of keeping their minds and hands occupied. The school session is shortened; the morning session begins at 9:15 a. m. and the afternoon ends at 2:15 p. m., with one hour, from 12 to 1, for lunch. One-half hour in both morning and afternoon is devoted to recreation. This year's schedule is as follows:

9:15 to 9:30. Assembly.

9:30 to 10. Treatment, including personal instruction and rest.

10 to 10:30. Arithmetic.

10:30 to 10:45. Spelling.

10:45 to 11:15. English.

11:15 to 12. Recreation (games in the playground or park).

12 to 1. Lunch.

1 to 1:15. Wash hands and rest, talks on current events and stories.

1:15 to 1:30. Memory work.

1:30 to 2:15. Manual work (basketry, weaving of rugs and coarse knitting).

2:15. Dismissal to clinic for treatment.

During the nine months of the first year, 1912, three hundred and twelve pupils (312) passed through this Ophthalmia school; during the second year, 207; and this year, 1914-15, from September 14th, 1914, to May 1st, 1915, 213 have been handled. Of these 732 children during these three years, two have been in the class continuously and only seven have been sent back a second time with a recurrence of their disease. The shortest stay in the class has been two days, the longest three years. The average is about ten days to two weeks. The two children who have been in the school three years have a very advanced form of trachoma with pannis. There have never been any cross-infections in this class.

The various kinds of cases treated are, acute conjunctivitis, including acute catarrhal conjunctivitis or "pink eye," purulent and phlyctenular conjunctivitis, chronic conjunctivitis, "trachoma," follicular conjunctivitis, syphilitic, tubercular and phlyctenular keratitis and neglected protracted cases of blepharitis.

This school at the present time still cares only for the children of the lower east side. The children of upper Manhattan, Bronx, Brooklyn, Queens and Richmond suffering with excludable eye diseases are still under their old system. It is hoped that in the near future funds for transportation will be available and that this school will be made a center for Manhattan and the Bronx at least. Brooklyn is so spread out and has such a large number of eye infections that it probably would need a school of its own.

The advantages of the system of segregation over that of exclusion may be looked at from the points of view of the child, the family, the school and the municipality. The excluded child loses not only its school work, but also his attendance (necessary for his working papers). The segregated child keeps up his attendance by being formally transferred from the regular class to the special class. He is able to keep up with part, at least, of his class work. By his constant and regular treatment (which few children, willing or not, unless they have cooperation, ever conscientiously carry out) his suffering is lessened and his cure hastened. At the same time, and most important of all, he receives instruction and personal demonstration on the causes and prevention of infection.

Segregation is of economic value to the family—usually a very poor one—on account of the saving of time for obtaining working certificates. At the same time, the knowledge that the child is in school and under treatment, rather than at large on the street, removes a source of anxiety from the parents, especially if the mother is also a wage earner and frequently out of the home by day. Moreover, at the classes at public school No. 65, bi-monthly talks

Fig. 4. The same family one year later. The boy and the mother in the front row were treated only sporadically, at the clinic. The girls were treated regularly, in the special school. Note the difference in their appearance.

and demonstrations on hygiene and the prevention of disease, especially on the prevention of eye diseases, are given to the mothers of the pupils.

The school keeps up its standard of attendance and does not lose control over the child as it does when he is excluded. An absent child cannot plead "sore eyes" lest the truant officer will get him. Truancy is discouraged.

The municipality gains by the reduction in eye diseases through the earlier cure by more constant and intelligent treatment and by the instruction of the child; and through the child and his mother, the family and neighbors are the gainers in personal and domestic hygiene and sanitation.

From what has been said, it would seem clear that the real value of this school to the community does not consist so much in its early and complete cure of the eye infections, however important that benefit may be in itself, but rather in the stress it lays upon the education of its pupils in hygiene, personal, family and municipal, and in its cultivating in them a spirit of personal civic responsibility and public-spiritedness by its example and teachings.

Fig. 6. The clinic in the school, showing use of rubber gloves, pledgets of cotton, and antiseptic solutions.

Fig. 5. Trachoma and other eye diseases are commonly spread by the use of the common towel. One of these boys infected three other members of the family in this way.

The Capacity of New York Municipal Hospitals

The following table, compiled by the Department of Health March 1, 1915, shows the present capacity of the institutions of New York City, the number of beds to be available when buildings under construction are finished, and those which will be available when buildings authorized, but not yet begun, are finished:

Hospital or Sanatorium	Present Capacity	Available When Buildings Under Construction Are Finished	Available When Buildings Authorized But Not Building Are Erected	Total
Department of Charities—				
Bradford Street Hospital	8	.....	.....	8
Cumberland Street Hospital	183	.....	.....	183
Coney Island Hospital	100	.....	.....	100
Kings County Hospital	1,210	.....	.....	1,210
Metropolitan Hospital	1,590	.....	.....	1,590
City Hospital	863	.....	.....	863
Children's Hospital*	450	.....	.....	450
Sea View Hospital	1,000	.....	1,000	2,000
Greenpoint Hospital	....	200	.....	200
Emergency Hospital†	....	.....	100	100
Neurological Hospital‡	684	.....	.....	684
	6,088	200	1,100	7,388
Bellevue and Allied Hospitals—				
Fordham Hospital	243	.....	.....	243
Harlem Hospital	208	200	.....	408
Gouverneur Hospital	186	.....	.....	186
Bellevue Hospital	1,379	727	.....	2,106
	2,016	927	.....	2,943
Department of Health—				
Willard Parker Hospital	938	.....	.....	938
Kingston Avenue Hospital	730	.....	80	810
Riverside Hospital	634	.....	200	834
Otisville Sanatorium	599	.....	40	639
Jamaica Hospital	....	125	.....	125
The Bronx Hospital	....	.....	125	125
	2,901	125	445	3,471
Grand total	11,005	1,252	1,545	13,802

*Randall's Island.
†East New York.
‡In the City Home on Blackwell's Island.

The Massachusetts General Hospital, at Boston, after experimenting for a year and a half with a cement shop affording employment to convalescents, has accepted the department as a permanent one in the institution. The idea was conceived by Dr. Herbert Hall, of Marblehead, who deemed it possible that an occupation could be established in the hospital whereby the patient, during the period of handicap, could be occupied both mentally and physically, and at the same time earn a few dollars each week toward the support of his family.

DEPARTMENT OF LIFE EXTENSION

Conducted by EUGENE L. FISK, M. D.
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The Relation of Weight and Build to Longevity

BY EUGENE LYMAN FISK, M. D.
Director of Hygiene, Life Extension Institute, Inc., 25 West 45th street, New York, N. Y.

No one needs to be told that emaciation indicates ill health, nor that gross fatness is a sign of diminished longevity; but to what extent possible variations between these extremes may affect vitality is not self-evident, and deserves some study.

There is an old adage, "A lean horse for a long race." Nevertheless, most people probably have greater confidence in the longevity of the so-called robust type than they have in the slender, underweight type. The robust type varies from 10 to 40 pounds over the average weight, and is often big-muscled, and of a massive framework.

This big-muscled, portly, physically aggressive and impressive type inspires confidence simply because we see it clothed. Clothes can be made to hang well on such people. But in a Turkish bath the type is not so impressive. Rolls of fat are noted, the abdomen is protuberant and sags. This body, originally symmetrical, with taut abdominal muscles and muscles of the limbs well defined, now has the muscles well covered with fat and there are fatty accumulations, especially around the trunk. It shows many curved lines which are not the lines of beauty—if we take the Apollo Belvedere or the Venus de Milo as our standard. The physical trainer will shake his head over this robust type, and enter this man in a race or a prize fight only as a sure loser.

But the average man will enter the desperate modern struggle for existence and for business or professional achievement less physically fit for the struggle than a prize fighter considers it necessary to be for the arena.

One important fact we have learned from life insurance companies: namely, that people of average weight are not the best risks—that is, after late maturity. In early life, a moderate degree of overweight seems to protect against tuberculosis and other maladies that claim the young, but after thirty the mortality on overweights rapidly increases, and even ten percent of overweight at the age of forty-five puts the individual in a class showing a mortality about 10 percent above the average. The highest death rate is found among those 50 to 80 pounds over the average weight at 40 to 45. The lowest death rate is found among those 25 to 45 pounds under the average weight at ages 57 to 62.

It may be broadly stated that, after thirty-five, the most favorable mortality is found among those a few pounds under the average weight. This assumes that the individual is in other respects normal.

The following tables serve as a useful guide to those who wish to bring their weight to the most favorable condition. These figures give the averages for large groups of insured lives.

TABLE OF AVERAGE HEIGHTS AND WEIGHTS

Based upon the report of the Medico-Actuarial Investigation, 1912, covering 221,819 Men and 136,504 Women

MEN

Age	5 ft. 0 in.	5 ft. 1 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 4 in.	5 ft. 5 in.	5 ft. 6 in.	5 ft. 7 in.	5 ft. 8 in.	5 ft. 9 in.	5 ft. 10 in.	5 ft. 11 in.	6 ft. 0 in.	6 ft. 1 in.	6 ft. 2 in.	6 ft. 3 in.	6 ft. 4 in.	6 ft. 5 in.
15	107	109	112	115	118	122	126	130	134	138	142	147	152	157	162	167	172	177
20	117	119	122	125	128	132	136	140	144	148	152	156	161	166	171	176	181	186
25	122	124	126	129	133	137	141	145	149	153	157	162	167	173	179	184	189	194
30	126	128	130	133	136	140	144	148	152	156	161	166	172	178	184	190	196	201
35	128	130	132	135	138	142	146	150	155	160	165	170	176	182	189	195	201	207
40	131	133	135	138	141	145	149	153	158	163	168	174	180	186	193	200	206	212
45	133	135	137	140	143	147	151	155	160	165	170	176	182	188	195	202	209	215
50	134	136	138	141	144	148	152	156	161	166	171	177	183	190	197	204	211	217
55	135	137	139	142	145	149	153	158	163	168	173	178	184	191	198	205	212	219

WOMEN

Age	4 ft. 8 in.	4 ft. 9 in.	4 ft. 10 in.	4 ft. 11 in.	5 ft. 0 in.	5 ft. 1 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 4 in.	5 ft. 5 in.	5 ft. 6 in.	5 ft. 7 in.	5 ft. 8 in.	5 ft. 9 in.	5 ft. 10 in.	5 ft. 11 in.	6 ft. 0 in.
15	101	103	105	106	107	109	112	115	118	122	126	130	134	138	142	147	152
20	106	108	110	112	114	116	119	122	125	128	132	136	140	143	147	151	156
25	109	111	113	115	117	119	121	124	128	131	135	139	143	147	151	154	158
30	112	114	116	118	120	122	124	127	131	134	138	142	146	150	154	157	161
35	115	117	119	121	123	125	127	130	134	138	142	146	150	154	157	160	163
40	119	121	123	125	127	129	132	135	138	142	146	150	154	158	161	164	167
45	122	124	126	128	130	132	135	138	141	145	149	153	157	161	164	168	171
50	125	127	129	131	133	135	138	141	144	148	152	156	161	165	169	173	176
55	125	127	129	131	133	135	138	141	144	148	153	158	163	167	171	174	177

As already stated, the mortality experience among insured lives shows that the most favorable death rate is not found among those of average weight.

Some allowance must, of course, be made for type. A large-framed man can carry more weight than a lighter-framed man of the same height. Nevertheless, it should be borne in mind that notwithstanding the efforts of life insurance companies to select only the favorable types of heavyweights—those whose overweight is due to heavy muscles, big bones, etc., and not to fatty accumulation—the mortality experience even on those of moderate overweight has been distinctly unfavorable.

It may be safely said that on the average the most favorable weight is that usually attained at full maturity, and that the ordinary gain in weight which comes about in advancing years is not normal and physiologic, but the

result of disturbed physiological processes which result in overburdening the organs.

It is not conceivable that mere overweight of ten percent can possibly harm the body. It is the personal habits that permit the accumulation of the weight that are harmful. The weight itself is a mere index of what is going on. Extreme overweight, however, may of itself be a positive menace to health, entirely apart from the factors that produce it.

Overweight is due to a disturbance of the proper relation between the expenditure of energy and the intake of energy food. It is a simple mathematical problem—not in higher mathematics, but in simple arithmetic. A man in so-called perfect rest expends a certain amount of energy—since there is no such thing as perfect rest during life. The amount of heat evolved and lost to the body depends upon the weight, the surface area of the body and, according to the recent brilliant discovery of Benedict's, the amount of active protoplasm in the body, that is, the amount and activity of the cells of organs and muscles. It has been found by several eminent investigators, Benedict and Lusk in this country, and Becker and Hamalainen, of Helsingfors University, that the energy output at rest, termed the basal metabolism, is approximately 1 calorie per hour per kilogram (2.2 lbs.) of body weight. A well proportioned man weighing about 154 pounds would daily consume fasting and at rest about 1,680 calories, and under moderate activity 2,800 to 3,000. Now, it is apparent that few overweight subjects, however inactive they may be, lose less than 2,000 calories of heat in 24 hours, and many lose much more than this. It is also apparent that when heat is evolved, something must be burned up, if not food, then the body tissues.

So it is evident that weight reduction is a simple matter of arithmetic. There is no mystery about it, no elaborate diet needed, no medicine, no incantations, rubbings, massage or fancy methods are required to bring down weight. Just a little guidance and a resolution to eat certain classes of foods and to abjure others, and a reasonable amount of exercise, will do the work automatically and unerringly. It is not even necessary to eat a small quantity of food and go hungry. There are certain classes of foods that are not unpleasant to the palate, that fill the stomach, allay the sensation of hunger, and yet supply only a small amount of energy food. They are rather misleadingly described as of low food value, for their food value is often high, in that they contain substances necessary to the body. They are simply low in fuel value. To this class of foods belong the fruits and bulky vegetables—celery, spinach, sea-kale, lettuce, string beans, cucumbers. On the other hand, there are foods that are very high in fuel value but not particularly valuable in other respects. These are the fats, sugars and starches. A pat of butter is as high in fuel value as a slice of meat. By taking a very limited quantity of butter and sugar, by avoiding fatty meats and eating a limited amount of concentrated starchy food, such as cereals, bread, pastry, etc., it is very easy to effect a reduction in weight.

There are, of course, cases where complicating disease requires that diet be prescribed with great care. But the ordinary case of overweight can be easily handled with a very rudimentary knowledge of dietetics, and by following the above outlined rules with a reasonable degree of persistence. It is strange that people will pay large sums to quacks and charlatans for fancy methods of treatment while refusing to follow the simple suggestions they can secure from a well-posted physician for a few dollars. A certain amount of self-denial is necessary, but there is no reason why the fat man should go hungry.

SOCIAL HYGIENE
VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
General Secretary, The American Social Hygiene Association,
105 West Fortieth Street, New York City.

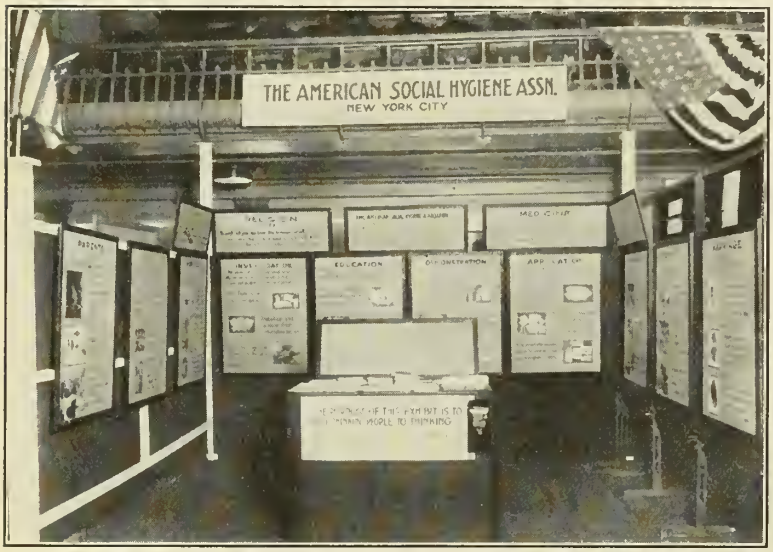
Social Hygiene Exhibits at the Exposition and Elsewhere

The use of the exhibit method to arouse popular interest in social reforms is now so general and accepted so much as a matter of course that its comparatively recent development often escapes notice. Almost every meeting which calls together a general audience or a group of experts in the interest of public health, charities and correction, civic enterprise, or any other of the many fields in which social progress is being made, has its series of exhibits designed not only to stimulate interest in the particular subjects to which they refer, but to give in concrete form information designed to influence as well as to inform even the casual visitor. The appeal of the exhibit is essentially through the eye. Its facts are reduced to their lowest terms. Its conclusions are often presented in graphic form. Pictures show their application to real life. It does not attempt to be argumentative, but makes a direct appeal, a frontal attack, with plain facts and evident conclusions for ammunition; to change the figure, its work is evangelistic so far as the popular audience is concerned.

The use of the exhibit method in social hygiene work was first attempted, so far as can be ascertained, by the California Social Hygiene Society, then known as the California Society for the Study and Prevention of Syphilis and Gonorrhea, in 1909. This exhibit, dealing in the main, as the name of the society indicates, with the venereal diseases, was shown generally in connection with public meetings in many cities and towns of California and is said to have attracted much attention and little adverse comment. It was also presented at the organization meeting of The American Federation for Sex Hygiene at St. Louis in May, 1910. Through the efforts of the late Dr. Prince A. Morrow, the managers of the New York Child Welfare Exhibit, in 1911, were induced to include in it certain material on ophthalmia neonatorum, showing its prevalence and indicating venereal infection as its cause. On this basis an appeal was made for sex education. So unusual was it at that time to present to a general audience any information or facts dealing with venereal diseases that these features of the exhibit incited a storm of protest from certain conservative quarters. When the International Congress on Hygiene and Demography met in Washington in the fall of 1912 the American Federation for Sex Hygiene, known as The American Social Hygiene Association, prepared a series of over two hundred and twenty-five panels dealing with prostitution, the venereal diseases, sex instruction and nature study as a means to it, and eugenics. These were supplemented by illustrated lectures and a collection of models provided by the United States Army Medical Museum. The projectors of this exhibit immediately found themselves notorious if not fa-

mous, for their work attracted wide attention and comments ranging from hearty praise to violent abuse. Whatever the merits or demerits of the material shown, this presentation marked an epoch in the social hygiene movement in America. The same exhibit, with some changes and omissions, has been repeatedly shown in other cities and has never failed to attract a large attendance and to arouse great interest. But never since its first showing has there been the clamorous protest against publicity through exhibit methods for social hygiene facts and theories. It must be conceded that whatever the faults of these early experiments, they did much to influence public opinion in regard to the propriety and desirability of public discussion for such topics as sex education, the venereal diseases and prostitution, and, in short, all problems of social hygiene.

The visitor to the Panama-Pacific Exposition at San Francisco will find rich material for the study of these problems. The American Social Hygiene Association presents an exhibit devoted, as would be expected, entirely to



Exhibition of The American Social Hygiene Association, at the annual meeting, New York State Medical Society, Buffalo, April 27-29, 1915.

them. It consists of a series of fifty wall charts supplemented by models, pictures, and illustrated albums dealing with the medical, educational, religious, and legal phases of social hygiene. The charts combine the merits of careful, accurate statements and attractive appearance. The general color scheme is a series of rich brown tones, ranging from the dark wood frames through the deeper tint of the walls to the light tone of the chart material. Many of the pictures used are in bright colors, in good keeping with the general decorative scheme of the Exposition buildings.

The exhibit is divided into three sections, presenting (1) the general social hygiene problem, (2) a detailed account of its various phases, (3) the activities of the American Social Hygiene Association. The problem is conceived not as a mere attack upon immorality and prostitution or an attempt to control and reduce venereal diseases or a campaign for sex instruction, but as a movement of broader scope including all these as related to life perpetuation—the handing down of unblemished physical and mental inheritance from generation to generation. Social hygiene, with this conception in view, is directed to the promotion and guidance of sex education, the establishment of the single standard of morality, and the suppression of prostitution and its associated evils—venereal diseases, mental and moral degeneracy, and economic waste. The work of the Association is shown as based upon four fundamental processes: (1) investigation, through which it seeks to obtain the facts related to every phase of the problem it is endeavoring to solve; (2) education, with the purpose of disseminating these facts and awakening public opinion; (3) demonstration of the utility of remedial and preventive measures devised in accordance with the principles ascertained through investigation; (4) application of such measures as are proved by experience to be of sure and permanent public advantage, with the belief that they will eventually find public support.

Among other exhibitors at the Panama-Pacific Exposition, showing material bearing on social hygiene questions, are The United States Public Health Service: The Venereal Diseases. The National Conference on Race Betterment (Battle Creek, Michigan): Heredity and Eugenics. The Anti-Saloon League: Liquor and Prostitution. The International Committee on Marriage and Divorce. The National Child Labor Committee: The Relation of Street Trades to Immorality. Massachusetts State Board of Health: Ophthalmia Neonatorum. The Oakland, California, Child Welfare League: Venereal Diseases in Relation to the Birth Rate and Children. The Sonoma, California, School for the Feeble-minded, and Oakland, California, Public School: Feeblemindedness. Massachusetts State Board of Insanity: Feeblemindedness. The Japanese Imperial Commission: Venereal Diseases.

The Social Economics Section of the Exposition offers to teachers a "certificate of study" of the exhibits under its direction awarded upon the basis of a written examination. Among the topics covered is social hygiene, regarding which the following statement is made: "Satisfactory answers to the following questionnaire will indicate a worth-while knowledge of social hygiene. It is based chiefly upon the exhibit of The American Social Hygiene Association at the Panama-Pacific International Exposition." This questionnaire covers social hygiene in its relation to biology, eugenics, hygiene, medicine, public health, pedagogy, sociology, ethics, religion, and government, and is well adapted to encourage the student to a careful consideration of the subjects presented, rather than a perfunctory preparation for answering a few test questions.

A section of the exhibit, dealing more particularly with the Association's plans and activities, has been duplicated and was recently shown at the annual meeting of the New York State Medical Society at Buffalo, April 27-29, 1915, where it was visited not only by physicians in attendance at the meeting, but by many non-professional residents of Buffalo. It was later shown at the National Conference of Charities and Correction in Baltimore, Maryland, May 12-19, 1915. Its general appearance and arrangement are indicated, though rather imperfectly, by the accompanying picture.

J. H. F.

Miss Elizabeth B. Ross, superintendent of nurses at the Minneapolis City Hospital, is one of twenty English nurses living in the United States who have been called to the colors by the British Government. Miss Ross sailed from Montreal, Canada, May 6, to take charge of a military hospital at LaPanne, France. She was born in Scotland but has spent most of her life in Canada.

PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
Department of Family Welfare.
DONALD B. ARMSTRONG, M. D., Director,
Department of Social Welfare.

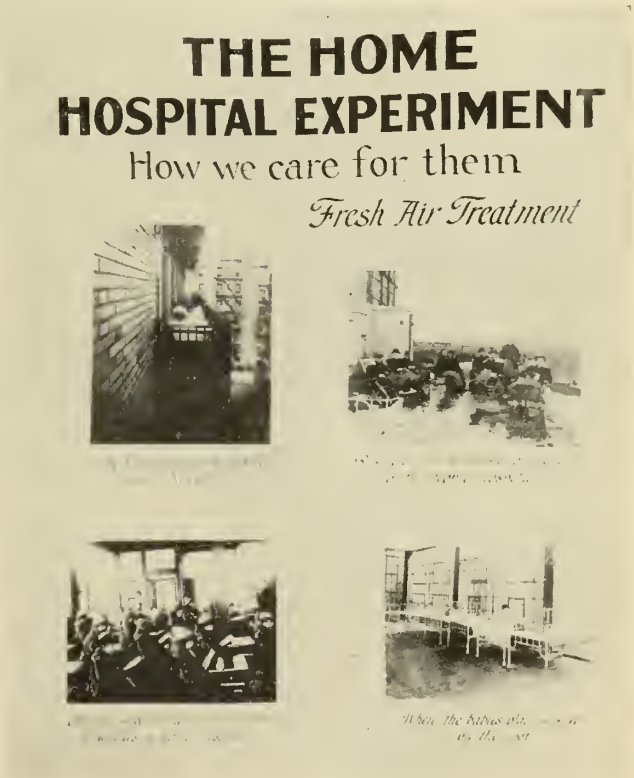
Philanthropy at the Exposition

In the Sociological Building at San Francisco, the New York Association for Improving the Condition of the Poor has an exhibit in which its health activities are illustrated in interesting panels. Seven representative panels, designed by Messrs. William Parr Capes and Holland Hudson, are reproduced below. The entire exhibit has been reproduced in a twenty-four page pamphlet entitled "Social Forces Visualized," published by the Association. The cuts on this page illustrate the work of Sea Breeze Hospital, Caroline Rest and Home Hospital, important in the relief activities of the Association for Improving the Condition of the Poor.

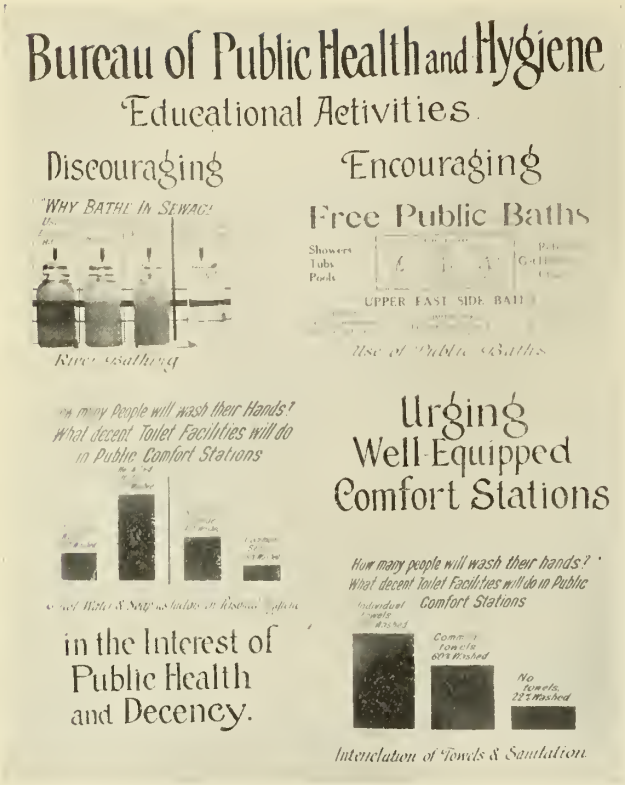
CAROLINE REST
Hartsdale, New York
A Home and School for Mothers Convalescing from Childbirth.
Caroline Rest
Teaching Proper Care of Sleeping Room
Sewing Classes in the pergola
"Recreation Time on the Lawn"

Caroline Rest, Hartsdale, N. Y., is not merely a sanatorium for the care of mother and new-born infant, but an educational institution in the care of children.

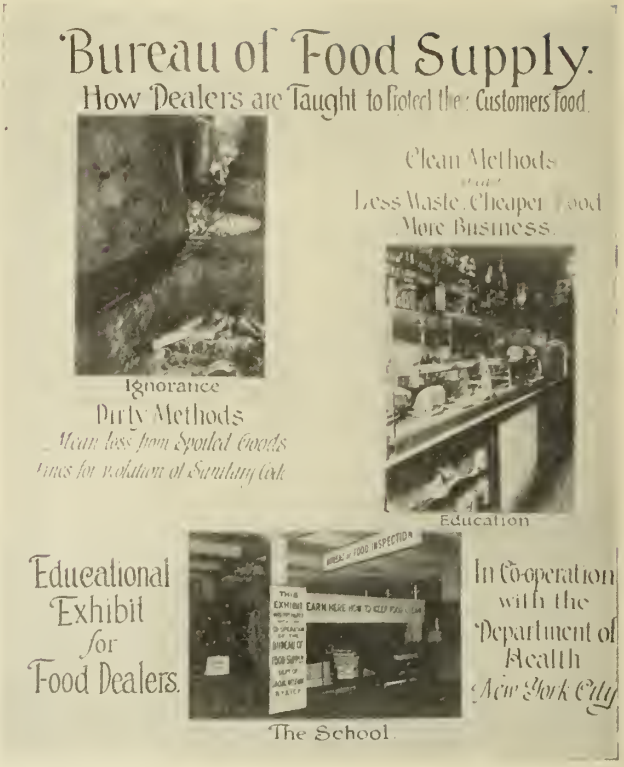
Sea Breeze Hospital, Rockaway, has done some interesting work in heliotherapy among the tuberculous poor. Two of its buildings were given to the city by the Association.



An article by Edward C. Brenner, M. D., describing the Home Hospital will be found on page 102 of THE MODERN HOSPITAL for February, 1915.



The establishment of public baths and sanitary washing facilities is an important factor in public health and hygiene.



"Public health is purchasable." Pure food—clean food—is recognized as an important factor in health conservation.

BUREAU OF PUBLIC HEALTH AND HYGIENE
Pioneering in Civic Enterprise.
A Peoples Laundry in New York City
Modern
Efficient Machinery
Careful handling
Absolute Cleanliness
Economy
30 lbs of wash for 35cents
Called for by wagon
and delivered dry
In 1850 the Association established the first people's bath.
The municipality now maintains fifteen in Manhattan.
In 1901 the Association opened the first people's laundry.
Will History Repeat Itself?

An article by Holland Hudson describing this People's Laundry appeared in the February issue of this department of THE MODERN HOSPITAL.

An article by Edward F. Brown on Lunches for School Children was published in the November, 1914, issue of THE MODERN HOSPITAL.

DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
Director of the Boston Dispensary.

The Irish Dispensary System

Little is known in this country about the dispensary system of Ireland, which is, however, remarkably developed, although along quite different lines from those with which we are familiar in America. The Poor Law authorities maintain a dispensary system which, in such cities as Belfast, Dublin and others, treats annually 10 percent to 15 percent of the population. Dispensaries also cover the rural districts. The expenses are met by the Poor Law authorities and, of course, only persons in receipt of poor relief—that is, paupers—are allowed treatment.

This dispensary service is, of course, largely conducted by individual physicians instead of, as here, in clinics in which a group of men work together. The American often wonders whether such a system is much better than the "lodge doctor system" for which most observers in this country have few good words to say. There is really very little parallel between the Irish dispensary system and the dispensary movement in the United States. The name "dispensary" should not mislead us.

Venereal Diseases

In November, 1913, a Royal Commission on Venereal Diseases was appointed in Great Britain for the purpose of studying this large subject carefully. The Commission has published a volume of over four hundred large pages containing the testimony of the witnesses summoned before it during the first six months of its activity. One of the most frequent sentiments expressed by the medical and lay experts who testified was the need of more facilities for the diagnosis and treatment of syphilis and gonorrhea. An increased number of hospital beds for the care of certain types of cases was often urged, but even more frequently was voiced the demand for more out-patient clinics. Of course, the larger part of the treatment of syphilis and gonorrhea is ambulatory.

There seems to be a preponderance of opinion that these out-patient departments should be attached to general hospitals and dispensaries rather than be specially labeled as dispensaries for venereal disease only. More than one witness proposed that public funds should subsidize such clinics as the only way of providing sufficient medical service to treat the vast number of cases of these diseases.

Another very interesting feature of the testimony in relation to dispensaries for syphilis and gonorrhea was the demand for evening clinics. This is expressed at no less than seventeen different points in the report by many different witnesses. Evening clinics are regarded as "very necessary," as "probably essential" in order to reach the cases that must receive treatment if syphilis and gonorrhea are to be kept under control. Thus James E. Lane, Senior Surgeon of St. Mary's Hospital, London, said, "I think that night clinics are a necessity for efficient treatment."

There is much in this report of interest in relation both to venereal disease and to dispensary work in general.

Evening Eye Clinics

In the first annual report of the Associated Out-patient Clinics of New York City, published early in 1914, reference was made to the increased need for medical service for persons of the middle class. "It is a well known fact," said the Report, "that a considerable portion of our population cannot afford to pay for the services of high-priced specialists. They have either to forego competent advice or resort to a dispensary. There are very many respectable and self-supporting people who would be glad to pay a moderate fee of a dollar or two and who are compelled to seek gratuitous advice at the dispensary because there is no institution in this city which would supply competent and conscientious medical service at a moderate price. The committee is collecting information concerning co-operative dispensaries abroad and in this country. Further interesting information has been received about the work of the self-supporting evening eye clinic of the Boston Dispensary. The report points out that the relation of such a self-supporting evening eye clinic to the local practitioners is entirely different in specialties, such as eyes, from that of a general medical department. In eye work it does not compete with the oculists, but with the 'optical parlors.' The same would be true of dental work, genito-urinary diseases, etc."

In the second annual report of the Associated Out-patient Clinics, published a month ago, the outcome of the deliberations of the committee is presented as follows:

The attention of the executive committee of the Association of Out-patient Clinics was called by the New York State Commission for the Blind to the evil effects of the promiscuous sale of eyeglasses from push carts or from counters of cheap stores. The Commission wrote that they were informed that such glasses were largely known to the trade as "culls," and that they were defective and likely to produce distortion of vision; that many people for whom glasses are required do not understand the necessity of securing those which are properly adjusted to their measure of vision; that others are prevented from consulting an optician by the high professional fees charged, and that for a great majority of the people, the hours of clinics during the day are inconvenient, and the lack of such facilities in the evening is responsible for the prevailing tendency to purchase glasses without medical advice. It is also claimed that such evening eye clinics could be established on a self-supporting basis, similar to that of the Boston Dispensary. The committee took up this matter and made an inquiry as to the number of existing clinics of the city which have evening classes, and also made an inquiry of all the clinics of the city as to whether or not they would consider the advisability of opening such clinics. This inquiry brought out two interesting facts:

First—That there are only two clinics in the city which maintain evening eye clinics.

Second—As to the advisability or practicability of opening evening eye clinics, all, with the exception of one clinic, expressed themselves against such a plan. Some admitted that such clinics are necessary in some sections of the city, but were unable to open them; others advised against them for various reasons, such as the difficulty of getting competent physicians to work in the evening clinics, and the lack of need for such clinics; others claimed that evening eye clinics are a luxury for clinic patients and an imposition on the medical profession. In one case the suggestion was made that Sunday clinics should be instituted in preference to night clinics.

In view of the adverse feeling of the membership of the association towards the opening of evening eye clinics

the committee has taken no action with reference to the matter.

There appear to be three questions at issue in this matter. First, is there need for more skilled medical service to the eyes than is at present available to some classes of population in New York City? The New York State Commission for the Blind presented certain facts. So far as can be judged from the statements made of the attitude to the clinics these facts were either not known or not fully understood by physicians and managers of the dispensaries. If the facts brought forward by the New York State Commission of the Blind *are* facts there *is* need for doing something.

Second, can competent medical service be secured in the evening clinic? Common sense would reply that it can not, unless salaries are paid, and that it can, if salaries are paid. Justice would add that physicians ought not to be expected to give service in evening clinics without salary.

As to the third point, that evening clinics impose on the medical profession, the statements quoted from the 1913 report appear to indicate that evening eye clinics would compete with opticians and shops selling eyeglasses over the counter without pretense of examining eyes, but would not compete with oculists at all.

Should not such important questions of policy be pursued further?

Question Box

A well-known superintendent sends this inquiry to the Question Box:

How would you overcome the objections of physicians to a dispensary in a city of 200,000 population?

This superintendent adds as a suggestion the reason for the inquiry:

"The doctors—a great many of them—feel that a dispensary is going to provide free care for people who would otherwise patronize them—and they see no other side to the question. They do not realize that patent medicine vendors and quacks of all sorts are preying on credulous poor people, who have tried one or two neighborhood doctors without getting the relief which they sought, the means for which relief should be put within their reach. I feel most strongly that we cannot hammer away too heavily on the need of establishing dispensaries in smaller cities."

It would seem that the only way to overcome the opposition to a dispensary in a city of 200,000 population, or any other city, is for those who have a feeling that a dispensary is needed to gather *facts* showing the need for it. Appeals to sentiment and arguments that "we ought to help the poor" carry some weight with the kind-hearted; but upon the state of mind which the superintendent describes in the preceding paragraph such arguments are not likely to produce a deep impression. Some concrete cases showing how poor people or people of small means have been unable to get the medical services which they needed, and what the results of this deficiency were, might be cited. It is often said that any medical man will answer, with or without pay, the call of the sick. That is true under certain conditions. Laymen familiar with medical work are the first to acclaim the splendid devotion and self-sacrifice of the medical profession; but medical men must earn their living, and they cannot afford to give more than a certain portion of their time to charitable service, nor can they have their private offices thronged with charity patients. The question is not whether the exceptional case or the very interesting case can get private medical service free, or for a nominal charge, but whether the great majority of such cases can get it.

Topeka, Kansas, went at the improvement of its health service in a very sensible way. Some business men of the town formed a committee, secured a report on sanitation through the Russell Sage Foundation, and made a Health Survey of the city. Their report can be obtained by anyone interested, by writing to the Russell Sage Foundation, 130 East 22d street, New York, N. Y. This report includes a study of the medical facilities of the town, and its Board of Health activities, sanitation, medical institutions, etc. In the printed report, certain dispensary clinics are recommended for Topeka as public health measures; but the great merit of the survey is that it has gathered *facts*. The facts, of course, covered a wider range than does the special question asked above, but nevertheless bears upon it in some measure.

The best kind of facts, as a rule, are individual cases. Such facts have the merit of being unanswerable. Argument provokes argument and leads too often to the result that more heat than light is thrown upon the subject. But with facts it is no more use getting angry than to lose one's temper at a brick wall.

The officers of the associated charities in a city of 200,000 might often be in a position to furnish such concrete facts showing the need of a dispensary. For another mine of information, look into the medical inspection in the public schools, and find out the number of cases in which physical defects, as bad eyesight, hypertrophied tonsils, ear troubles and postural defects are discovered among the children. Find out then how large a proportion of these defective children (in the whole city or, if that is not possible, in one particular school) received treatment or care for their defects, and had them remedied by an operation, or by eyeglasses, braces, or better living conditions. You may ascertain, as a result, that a large proportion of the children are found to have defects, but are not found to have secured treatment for them. This *has* been found to be the case in many communities.

We ask "Why?" The answer is found to be that the parents cannot afford to pay for the medical service needed; and the answer to *that* problem must be a dispensary.

If the superintendent of a hospital or members of its board of trustees, thinking that a dispensary is needed, set about getting the necessary backing, let them take care that they take into consultation at least a few of the leading and most likely physicians of their city, men who, by reason of their position, are disinterested. If necessary, invite them to dinner with some of the business men of the town, preferably business men who are good patients; and certainly those who are already interested in the idea of a dispensary. Invite a speaker or two from the state health department, the local associated charities, or other cooperative and well-informed agencies. Get the facts into the heads of everybody, being sure that the facts are served warm with enthusiasm. Remember, that it is not an easy job to overcome opposition, if there is opposition, and that it takes steady pushing. If you cannot get a dispensary started in this manner and are still convinced that there is need for it, then there is nothing else to do but to put up the money and get it started anyway.

Remember, finally, that when a thing is once going, success, as measured by service rendered to the people, is an argument which the general public will regard as finally unanswerable.

Dr. Fred M. Auld, a subscriber to THE MODERN HOSPITAL, from Weihwei Fu, Honon, China, writes that the Canadian Presbyterian Mission contemplates the erection of a hospital at Weihwei Fu in the near future. Dr. Auld is in charge of the work of planning.

LETTERS FROM OUR FIELD EDITORS

HEALTH PROGRESS IN PENNSYLVANIA

Criticism of Philadelphia Hospitals—Rebuilding of Presbyterian Hospital, Philadelphia—Orangemen's Hospital—Drugless Therapy Bill Defeated—American Hospital at Paris Gets Aid—Invitation to American Hospital Association

PROPOSED NEW ITALIAN HOSPITAL

Preliminary plans for the Italian Hospital of Philadelphia were discussed in a meeting of the Italian students of Philadelphia at a reunion dinner held on March 20, last. Italian students from all the educational institutions in the city were present. Nothing definite was decided. It is the opinion of your correspondent that no such institution is required in this city, the Italian sick being well cared for in institutions already in existence.

STATE OFFICIAL RAPS PHILADELPHIA HOSPITALS

Dr. J. M. Baldy, President of the State Board of Medical Licensure, made a very forcible speech in an address before the Medical Societies on April second. Dr. Baldy frankly stated that there were entirely too many inefficient hospitals and too few efficient ones. He stated that there were very few hospitals in the State of Pennsylvania that could reach the standard of equipment desired by the State Board of Medical Licensure. It may be remembered that the State Board now requires one year's hospital service for every one of the graduates of medicine before they may gain the State license to practice. For that reason the State Board has defined what they consider the necessary standard for institutions that desire to give students their post-medical year. The point that Dr. Baldy endeavored to press upon his audience was that it was up to the physicians to demand adequate equipment for the hospital in which they worked.

GERMANTOWN HOSPITAL'S NEW MATERNITY WING

The Germantown Hospital has just completed at a cost of approximately $35,000 the new maternity wing, which was opened to receive patients on March 1. The building is of brick with terra-cotta trimmings; it is 38x 140 feet, and is divided into two portions, one for partly free patients, and the other for pay patients. In the first portion there is one large ward, two small wards, operating, sterilizing, and linen rooms, etc.; the pay wing being devoted entirely to private rooms.

REBUILDING THE PRESBYTERIAN HOSPITAL

The comprehensive plans for the entire reconstruction of the Presbyterian Hospital of Philadelphia have been given to the public. The present overcrowded structure will gradually be replaced by the new edifice, to be five stories in height, constructed of granite, limestone and brick, and including every modern detail of hospital design. The hospital is to be composed of five units, the private patients' ward, with laboratory and dispensary buildings in the rear; the surgical ward building; the administration building, with kitchens, service ward, etc.; medical ward with isolation ward adjacent; operating rooms; children's ward facing Filbert street, with a southern exposure, which will be designed to make as cheerful as possible the little tots who are to receive medical attention therein. The building will be well lighted from all sides, and when finished will be a structure in its appointments second to none in the country.

ORANGEMEN'S HOSPITAL

Architects are now preparing plans for a hospital building in the vicinity of Willow Grove for the Orangemen's Association. Its details call for three stories, stone, and slate roof. It will cover 45x80 feet.

ADDITION TO THE JEWISH HOSPITAL

The new medical building of the Jewish Hospital, Old York Road and Olney avenue, has been opened to the public. Of the construction cost $50,000 was given as a direct bequest by Mr. Samuel Kohn, and $20,000, including $5,000 for furnishings, was given by his brother, Simon I. Kohn. The completed building stands, detached, directly north of the other buildings of the hospital, in the Tabor Road. It is in the style of the early Georgian period of the English Renaissance, three stories high, 112 feet long, and thirty feet wide. On the second and third floors, each of which contains two good-sized wards, one room at the eastern extremity has been fitted up as a sun parlor for convalescent patients. The first floor contains the receiving department, the dining room, diet kitchen, locker rooms, waiting rooms for visitors, store rooms and drying rooms; two isolation rooms for patients. The building is as fireproof and sanitary as it can be made. The walls are of stone and brick, with steel girders, and the floor slabs of reinforced concrete.

DRUGLESS THERAPY BILL DEFEATED

The bill before the State Legislature at Harrisburg to create a separate State Bureau of Licensure of practitioners for drugless therapeutics was defeated in the House at Harrisburg, March 29, by 94 "noes" to 76 "ayes."

INVITATION TO AMERICAN HOSPITAL ASSOCIATION

The following resolution was extended the American Hospital Association, inviting its members to visit the city of Philadelphia in their next session in 1916:

Resolved, by the Select and Common Councils of the City of Philadelphia, that an invitation be hereby extended to the American Hospital Association to visit the city of Philadelphia in 1916, at their next annual session, and that a set of this resolution be sent to the meeting of the American Hospital Association, San Francisco, in June, 1915.

WASSERMANN TESTS FREE

The Commissioner of Health, Samuel G. Dixon, has notified the physicians of Pennsylvania that the Health Laboratory will make Wassermann tests free upon request. This addition to the laboratory service of the Health Department will be a great boon to hundreds of physicians and to small hospitals treating charity patients.

AMERICAN AMBULANCE HOSPITAL, PARIS

The $15,000 necessary to open the Philadelphia ward of forty beds in the American Ambulance Hospital, Paris, and its maintenance for six months has been exceeded by more than $8,000, and in addition, five individuals have offered to duplicate their subscriptions, amounting in all to $1,800, if it should be necessary to keep the ward open for a second period of six months. A state staff from the University of Pennsylvania is now being organized by Dr.

J. William White to take charge of an entire floor of the institution during the months of July, August and September, following the Harvard Medical School contingents.

BEQUESTS

By the will of the late Edward D. Toland, bequests of $5,000 to the Chestnut Hill Hospital, and $1,000 to the Children's Hospital were made.

The late Elizabeth S. Scattergood bequeathed $10,000 to the Hahnemann Hospital. Mrs. Scattergood's estate was valued at $25,000. Her will provides that after the several relatives have been paid, the residue shall go to the Home for Consumptives at Chestnut Hill.

MEDICAL MEN FOR CHAMBER OF COMMERCE

The Chamber of Commerce of Philadelphia has been making strenuous efforts during the last month toward reorganization, and every organization in the city of Philadelphia has been canvassed and urged to join the greater organization. It is now suggested that physicians join the movement and various arguments are being brought to bear upon them to this end. A special medical committee has been formed.

HEALTH CENTERS

One of the most successful and important measures for the reduction of disease and mortality among the poor is the establishment under the auspices of the Philadelphia Babies' Welfare Association of what is known as the "Health Center." In most instances these have been operated as independent units, with central administrative control, but as a rule with no official connection with any hospital.

ADDITION TO THE UNIVERSITY HOSPITAL

The contract has been awarded for an additional hospital building for the University of Pennsylvania, to be located at Spruce and 36th Streets. It is to be five stories high, of concrete, brick and steel, 54x105 feet, and is to cost $130,000.

FARCICAL CHARITIES' CONTROL

Dr. Hastings H. Hart, Director of the Child-Helping Department of the Russell Sage Foundation, who addressed the Children's Bureau recently, called attention to the fact that the State Board of Charities has only two agents to visit and keep in touch with 260 institutions for children throughout Pennsylvania. In these institutions approximately $84,000,000 is invested. The Board of Charities cannot afford to have more agents, although two are ridiculously inadequate, because the State does not give it enough money. The State Board should either be given the means to have a larger force, so that it can do this work among the children's institutions effectively, or a separate children's board should be established, as in New Jersey and the District of Columbia.

WILLIAM H. WALSH.

Interesting Letter From Mr. Clark

I have gleaned some rather interesting bits of knowledge from my southeastern states field during the last couple of weeks.

Major P. C. Fauntleroy, superintendent of the United States Military Hospital at Fort Monroe, Virginia, has been sent to San Francisco to take charge of the educational exhibits in connection with the standards of the various states in regard to municipal health regulations, school regulations and commercial attempts at betterment in factories, etc. The object of this exhibit is to obtain better cooperation between the state authorities and scientific bureaus of the Federal Government. To quote from a letter which I recently received from him:

"There are a few states that have partially organized their scientific forces and to a small extent correlated them with those of the federal government, but the great extent to which these betterment agencies are neglected throughout the country indicates the low standards and nonefficiency that generally obtains. There is no doubt everywhere a desire for modern standards and efficiency, but experience has fully proven that we can expect such only when the state forces are subordinate to and operate under the quickening influence of federal inspection and supervision. Again, let me invite your attention to the Arequipa Sanatorium exhibit, which shows the great value of providing profitable employment in suitable climate for early and arrested cases of phthisis. The idea of so influencing such cases to remain in a suitable climate under favorable and self-supporting conditions may well occupy the attention of the federal and state scientific departments."

Then from Dr. E. E. Clovis, superintendent of the State Tuberculosis Sanatorium of West Virginia at Terra Alta, I have a few interesting facts which I append here. I am also sending a photograph of the sanatorium, which shows how simple can be the erection of a sanatorium for the care of phthisis patients. Some of the problems which he mentions will come, I imagine, in all states, and may be worthy of discussion. I believe our sanatorium is very well conducted and will be a decided factor in the reduction of tuberculosis in this state.

Miss Sarah E. Dock, R. N., superintendent of Riverside Hospital, Paducah, Kentucky, would like to hear from other city hospitals as to the proper menu for city patients; proper from the standpoint of a right diet as well as from expense incurred by the hospital. She further states that in the Riverside Hospital they care not only for the city charity patients, for whom they charge 85 cents per day, but they operate a private department as well. This is a rather interesting condition and is perhaps the best solution for our smaller cities for the operating of a general hospital, combining the care of the city charity cases with that of the private ones. Miss Dock also states that the tuberculosis sanitarium is under the charge of the Riverside Hospital, an arrangement which might well be followed in other places and so reduce the expenses in connection with officering them.

PLINY O. CLARK.

LETTER FROM DR. CLOVIS (SEE REFERENCE ABOVE)

"It is probably a fact that one hundred of the physicians of our state do not even know that West Virginia has a sanatorium for the treatment of tuberculosis, and probably more than two-thirds of the lay people are totally ignorant of the fact.

"It was through the organized efforts of the Anti-tuberculosis League of West Virginia that the bill was passed by the Legislature of 1911, carrying with it an appropriation of $40,000.00 for the erection of a tuberculosis sanatorium, the site to be chosen by the state board of health and the state board of control. After looking over many proposed locations, the present site was chosen by a unanimous vote of both boards, and buildings were commenced in the summer of 1912 and completed the first of the following year, at which time we began receiving patients. Since that time we have treated in all about three hundred patients, but for different reasons we have been unable to get but a few early cases.

"After studying over the cause of this, I have concluded that there are three main reasons. First, many patients and their physicians do not know of this institution; second, patients are reluctant to believe they have tuberculosis until they are in an advanced stage, and only

Infirmary, State Tuberculosis Sanatorium, Terra Alta, W. Va.

come to us as a last resort; and, third, the inability of many physicians to recognize the early signs of tuberculosis, and failure on their part to emphasize the fact to the patient until valuable time is lost. Notwithstanding the many obstacles we have had to encounter, however, we have been a success; we have been running in full capacity for the past eighteen months, and have at the present time a capacity for sixty patients. During the past few months our daily average has been fifty-eight, with a great demand for many more beds. In fact, the demand has become so great that the state officials have recognized it and have come to our relief, and are now building new buildings that will double our capacity. We hope to occupy these about the middle of the coming summer.

"During the session of the Legislature that has just adjourned, we received the liberal appropriation of $70,000.00 for current expenses for the next biennial, and $20,000.00 for improvements; we also received an appropriation of $30,000.00 for new buildings. This item, however, the Governor was compelled to veto, on account of the Legislature having failed to devise any means for raising revenue for the payment of these appropriations; but, after all, we have been bountifully blest by the Legislature and the board of control, which has charge of this institution.

"We invite inspection by any of the physicians in the state or by any individual who is interested in the campaign against the white plague, and extend to you a cordial welcome to visit us."

News Budget From Kansas City

It looks as though there would be considerable doing here this summer in the way of hospital building.

The South Side Hospital will be reconstructed and its capacity increased from forty to sixty beds; the plumbing and lighting, etc., are to be entirely done over, so that it ought to be a pretty nice small hospital.

Work on the Christian Hospital is hanging fire and it will not be opened until late this fall—probably the first of October. So far as anyone knows, nothing has been done in the way of organization. The building looks fine from the outside, and if the board will select a good man and let him manage the institution they ought to have a good hospital.

The German Hospital will erect a new addition, to cost $150,000. I understand that this will be done just as soon as the weather will permit. This will give them an entirely new hospital, with capacity of about 200.

The Sisters of St. Joseph have everything ready to start their new building; even the money is ready. I am told the plans are ready for the contractor. They have a fine lot, in a splendid locality, and ought to have a good building.

The foundation for the new Wesley is just starting, and in my opinion this will be the best hospital here. It is owned entirely by Dr. J. A. Robertson, who is the best hospital man here. It will be a down-town hospital, of 100 beds, and as nearly fireproof as it is possible to build it. It will cost $150,000. R. E. CASTELAW.

LETTERS TO THE EDITOR

Inefficient Hospital Planning

Philadelphia, April 13, 1915.

To the Editor of THE MODERN HOSPITAL:

I have read with profit and interest the article by Oliver H. Bartine entitled "Building the Hospital—Organization and Methods," and wish to congratulate you upon your discrimination in publishing such an eminently practical paper. As an architect, I know only too well how much money is foolishly wasted through ineffective planning and incomplete and faulty mechanical equipment. There is no question but that the best investment a hospital board can make is to engage the most competent professional advisers at their regular fees. Bargain architects and bargain engineers are to be avoided like the plague.

ALBERT KELSEY,
Architect.

According to a report recently furnished Governor Brumbaugh, of Pennsylvania, by the mayor of Philadelphia, at the request of the former, more than three million dollars are expended annually by the city of Philadelphia for the care of persons whose crimes or dependent conditions are directly due to the use of intoxicating liquors. The report does not include the work of private charities. In the coroner's office it was found that 75 percent of suicides are due to alcohol; that 50 percent of the murders are committed by persons under the influence of liquor; that 90 percent of the gas asphyxiations are the result of intoxication, and that 75 percent of the deaths supposed to be due to liver trouble are directly traceable to stimulants. It is estimated that 60 percent of the total amount required for the maintenance of the city's paupers is used for the care of alcohol victims and that 35 percent of the expense of operating the Philadelphia General Hospital is chargeable to inebriety.

QUERIES AND ANSWERS

Lint From the Blankets

To the Editor of THE MODERN HOSPITAL:

We are very glad to receive THE MODERN HOSPITAL and are interested in every number.

There is one question we would like to ask:. What can be used in a room in the way of bedding, counterpanes, sheets, and blankets to get rid of lint? This is one of the most distressing conditions in the patient's room and makes the room much more unsanitary and untidy. We would appreciate a suggestion along this line.

THE GUTHRIE HOSPITAL,
Huntington, W. Va.

This is not only a distressing problem, but one that has not yet been solved, to our knowledge. Perhaps some reader of THE MODERN HOSPITAL will help us out with some helpful information.

The lint, of course, is made up mostly of the wool nap of the blanket fabric, and we cannot help feeling that most of it is due to poor weaving. Very often we buy "all wool" blankets, fluffy and beautiful, only to find in a short time we have got down to bedrock, with all the fluffiness gone, and only the tightly woven part showing. The blanket then looks cheap, and is not nice to have next to one's face or body. The "40-percent" blanket, 40 percent wool and 60 percent cotton, loses its nap a little sooner than the all wool.

We doubt whether there is anything to be done about it but to clean up the litter. But we have taken up the problem with blanket manufacturers and hope to have a better answer soon.

Color in Operating Rooms

To the Editor of THE MODERN HOSPITAL:

We have an inquiry from a hospital which states that the walls of their operating room are finished in white enamel. There are a number of windows in the room, which make the light very intense. They claim that there is too much glare and this affects the doctors while operating.

Do you know of any hospitals where the enamel is tinted to a shade of gray or otherwise in order to overcome the glare? Any other information you can give us concerning the best methods of finishing operating rooms, that is, so far as colors, etc., are concerned, will be greatly appreciated.

PATEK BROTHERS,
Milwaukee, Wis.

We have been thinking about this for years, and something is being done. The splendid hospital of the Colorado Fuel & Iron Co. at Pueblo, built about five years ago, was the first to have other than white coloring in its operating rooms. Dr. Corwin of that institution gave his operating suite a lead gray color with a flat finish. Since then a few hospitals have followed him. St. Luke's Hospital at San Francisco has a dull green for six feet up, the balance of the wall to the ceiling a lighter or olive green, and the ceilings are cream. This was done about a year ago, and the story was published in THE MODERN HOSPITAL. There was a lot of inquiry about the results in this hospital, and we are sure that Dr. W. B. Dorr, superintendent of the institution, would tell you how it has worked out. We ought to say that in this room black operating clothes were worn instead of white. They tried green but found they could buy nothing that would wash well and finally adopted black. Dr. Carrel, of the Rockefeller Institute, who is one of the foremost experimental surgeons of the age, has been using a dark green or gray in his operating rooms at the Rockefeller Institute, and has also been using black operating clothing and sheets.

There must be a number of hospitals that have adopted the dull colors for their operating rooms. We have written a good deal on this subject, the general tenor of which is indicated in an editorial in the January, 1914, number of THE MODERN HOSPITAL.

Sound-proofing the Hospital

To the Editor of THE MODERN HOSPITAL:

I am writing to you for advice on details of hospital building. At present my hospital consists of a central portion, which is used as an administration building, and which also houses my own offices. The part devoted to bed-patients is an L-shaped wing. I am now beginning the erection of a similar but larger wing on the north side of the central building, and want to avoid, if possible, a serious objection in the present wing. This wing is a veritable sounding-board. Noise at one end of the L is transmitted to the other end so plainly that at times it is difficult to believe that it is not in the hall within a few feet of you. Ordinary conversation in the office-building is heard in any of the rooms, if the doors are open. Is there any way in which this can be avoided?

Does THE MODERN HOSPITAL give advice on the best place to buy various hospital supplies, considering both quality and price?

WHEATLAND HOSPITAL,
Fred W. Phifer, M. D.

I am afraid I shall not be able to give you very much help as to the cause of the sound-carrying character of your present building without knowing more about it. Is it a frame building or concrete, or what is the construction? Please tell me something about it, and do you propose to duplicate this same kind of construction in your new wing, or do you propose to build a sound-proof, fire-proof building, and if so, how large do you propose to build it; that is, for how many patients? I should be more than pleased to give you some real help about this if I knew what you have now and what you propose to build. You might send me the floor plans of your present hospital if you have them, and a photograph of the exterior, and give me something about the character of the construction.

THE MODERN HOSPITAL does not give advice on the best place to buy hospital supplies, considering both quality and price, excepting insofar as its advertising pages show. THE MODERN HOSPITAL is unique among publications in this country, in that it declines to accept advertising of products excepting such as its editorial staff can recommend, and you will be perfectly safe in buying from any of the houses advertising in THE MODERN HOSPITAL. We perhaps reject quite as much advertising as we accept, and every advertisement submitted goes across the editorial desk to the business office, and not vice versa as the case usually is. If you will tell me what it is that you want to buy I shall be glad to give you some personal suggestions of my own, and in that way perhaps help you to a decision.

JOHN A. HORNSBY.

It is now reported that in addition to the hospital to be erected on the site recently purchased at 165th street and Broadway, New York City, by the trustees of the Presbyterian Hospital, of that city, Columbia University will build a great medical school and a number of research institutes, the entire project to involve the expenditure of $10,000,000.

THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

Electricity as a Fuel for the Hospital Kitchen

BY HARRY G. WEEKS, E. E.
(First Article)
Designer and Consulting Engineer in Electrically Heated Appliances, Chicago, Ill.

The pioneer work of the past five years in the field of electricity for cooking purposes has been productive of far-reaching changes, all tending to make more advantageous the use of electricity as a fuel, as against coal or gas. Whereas a few years ago only small fragile apparatus was in use among families, today food for thousands is cooked by electricity. The naval department has been largely a pioneer in this field, owing to the demand for a fuel applicable to oil fuel ships; and on land the use of electrical apparatus has gradually been creeping into various fields where coal or gas was previously the only fuel.

Two disadvantages have militated against the general use of electricity as a commercial fuel; one, the short life of the heating apparatus caused by open circuiting, due to oxidization by heating repeatedly up to 700 degrees centigrade, has been overcome by the use of the comparatively new alloy known as "nichrome," which is not subject to oxidization like the alloys formerly used. Oxidization causes the resistance wires to break and stops the circuit.

Nichrome, used in elements designed to operate within safe temperatures, gives reasonable durability, the expected life of the elements being not less than five years of daily service.

The second disadvantage of electricity is the cost. This, however, is non-existent in many places. A modern plant, such as is being installed in the newer hospitals, may reasonably be expected to deliver current in summer at a cost of 2½ cents per kilowatt hour; in winter, when the cost of heating by the use of the exhaust steam is credited to the plant, the current becomes almost a by-product, not costing over 1½ cents per kilowatt hour. Electricity at 2½ cents per kilowatt hour may be said to be the dividing line at which the electric current becomes a practical fuel, in competition with artificial gas or coal.

Admitting, then, the durability of the heating apparatus, and considering it a fact that 2½ cents per kilowatt hour is the cost for electric current obtainable under modern conditions, we can now consider the advantages to be gained by the use of electric current in the kitchen for all purposes except the steam kettles.

1. Perfect combustion may be said to be unknown in gas appliances; the unburnt gases permeate the atmosphere of the room, affecting the respiratory organs and eyes of those employed there; whereas there are no noxious products in the atmosphere when electricity is the fuel. In ovens, and in toasting and broiling, these noxious gases are often brought in contact with the food, to its detriment.

2. Explosions are often caused by gas, and matches are a necessity unless an automatic lighter is used.

3. In the sealed oven of the electric range the flavor of the meat is preserved and there is practically no shrinkage of the meat.

4. In cost, electric current delivered at a cost of 2½ cents per kilowatt hour equals artificial gas at 60 cents per thousand cubic feet.

5. Coal has of course more defects as a fuel than gas; it has to be carried, the fire has to be constantly replenished, ashes have to be carried away and flues have to be cleaned of soot deposits regularly; whereas the turning of a button takes the place of all the labor incident to the use of coal in the kitchen ranges, and the kitchen is minus the attendant dirt.

The conservation of heat is an important feature in the construction of modern electric appliances and the foregoing comparisons of cost are based upon the proper insulation of the ovens and broilers. This insulation, because it stops radiation, reduces to a minimum the heat in the kitchen. When either gas or coal is used this radiation is pronounced; a great many of the heat units in the fuel are distributed in the atmosphere of the kitchen, to the discomfort of all employed there.

In the natural gas fields, where gas is as low as 20 cents per thousand cubic feet and has a calorific value 25 percent in excess of artificial gas, electricity, even at 2½ cents per kilowatt hour, cannot compete, because the cost of operation electrically would be 2½ times that of natural gas at 20 cents.

The objection has been advanced that cooks will not use the switch buttons to turn on and off the top hot plates and to regulate the heat of the ovens; but the fact that, by proper regulation, their own personal comfort is assured by the lessening of the heat coming from the tops of the ranges, assures their attention to this detail to a very large extent.

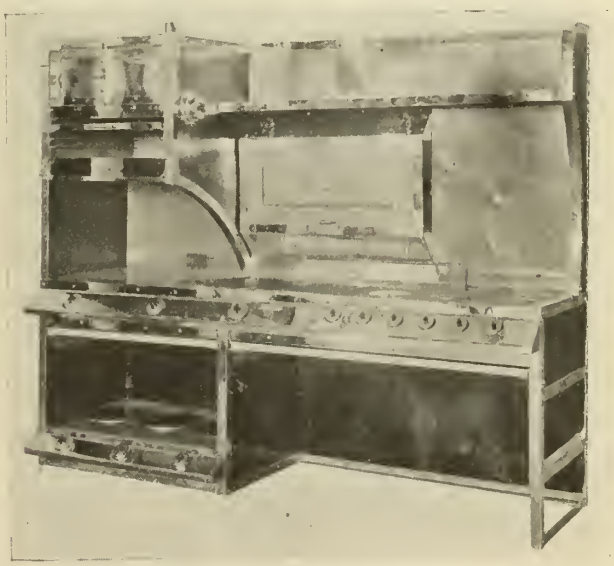


Fig. 1. Electric range of special design.

Fig. 1 shows one type of electric range built for a special purpose. It consists of a broiler 24 inches wide by 14 inches deep, which can be used for both broiling and toasting and is high enough for use as a salamander.

Ten-inch, 8-inch, and 6½-inch hot plates are provided, taking the place of the French top of the coal range. These hot plates operate at about the same cooking speed

as giant gas burners consuming 30 cubic feet of gas per hour each. One quart of water can be raised from faucet temperature to boiling in five minutes, using one-twelfth of a kilowatt hour. The remainder of the top is made up of griddles about four feet wide and 30 inches deep. On these it is intended to make griddle cakes, fry eggs, chops, etc., without pans. The broiler consumes 1,500 watts per hour, and at that energy operates at the same cooking speed as gas, broiling an inch-thick steak in ten minutes.

Ranges for hospital purposes would of course contain ovens, which the one illustrated does not; and it is in these, on account of the insulated walls, that the highest heat efficiency is obtained. Current at 3 cents per kilowatt hour can be used in these ovens at the same fuel cost as with artificial gas at 75 cents per thousand cubic feet.

Electric ovens are heavily insulated and have no flues. A small oven, say 18x18x13 inches, will consume 3,500 watts per hour. The oven door should be opened as little as possible, as the temperature falls about 50 degrees at each opening.

A baking temperature of 450 degrees is attained in ten minutes and then the switch can be turned to low heat, the insulation enabling the temperature to be maintained with the minimum current. In bread baking the current should be left on for 30 minutes and then should be turned off, the insulation maintaining the necessary temperature to finish the baking process during the remaining 20 minutes the bread is left in the oven.

The current consumption of the hot plates is as follows: 6½-inch hot plate for utensils up to 8 inches diameter of bottom, 750 watts on high heat per hour, 375 watts on medium heat and 187 watts on low heat; 8½-inch hot plate for utensils not exceeding 10 inches bottom diameter, 1,200 watts on high heat, 600 watts on medium heat and 300 watts on low heat per hour; 10-inch hot plate for stock kettles, 2,000 watts per hour, doing the work of a giant gas burner consuming 30 cubic feet of gas per hour; 1,000 watts on medium heat and 500 watts on low heat.

Until recently electric ranges have suffered from too light design. The engineers responsible for their construction were not familiar with the demands made on ranges used for the heavy duty demanded in hotels and institutions; consequently the earlier construction created a certain amount of prejudice against their use. There is no reason, however, why the electric range should not be built just as strongly as the coal or gas range, and this is being done at the present time. Before very long a complete electrical equipment will be installed in a new hospital now nearing completion which will demonstrate that all the strength necessary can be put into the range run by electricity.

Another bad feature of past electric range construction has been the placing of the electric switches in inconvenient positions, and the absence of a shelf for the placing of pots and pans. In the newer forms of construction a shelf, or two shelves, are provided, and the switches with dials at an angle of 45 degrees for easy reading are placed in the same position as the gas cocks on the gas ranges. A main switch should be provided at the back of the range with a red lamp in parallel to show whether the current is turned off or on. All parts of the range should be of easy access in case of necessary renewals, and all heaters should be designed to give three heats to admit of proper elasticity of heat regulation.

At the present time it is advisable to submit the kitchen needs of the individual institution to the designer, so that the range and all the other desired appliances can be made to suit the work which it is desired to accomplish. The ease with which the heating appliances can be located wherever they will be most convenient for the work to be done makes the designing of an electric range a different problem from the designing of one for gas or coal fuel; in those all the heating must be concentrated to reach the flue outlet, the necessity for which does not exist in the electric range.

Coffee Urns

The things which are apt to go wrong in coffee urns during the course of their use, and which are directly attributable to their construction, are the following:

Unless the opening between the top of the porcelain urn jar and the side of the urn is tightly sealed, coffee will enter the water jacket and gradually coat it with coffee grounds, causing an unsanitary condition, discoloring the jacket water and emitting an odor which spoils the taste of the coffee being made.

Therefore a first-class urn must have the opening around the top of the porcelain jar hermetically sealed with a cement able to withstand steam.

Unless the base and feet of the urn are made of a heavy brass casting they are liable to warp under the weight of the urn when full, which permits the seams to loosen and causes leaks and general disintegration of the urn.

Unless the faucet plunger is made of a comparatively heavy casting the faucet will be useless after two or three re-grindings. All urn faucets require re-grinding, and the life of the faucet consequently depends upon the amount of metal provided at the start to stand the re-grindings which are inevitable. Faucets should be silver-plated, because the action of coffee on nickel plating rapidly eats it away; and this silver plating should be directly on the brass casting forming the faucet, and not merely a thin silver coating on nickel. Silver does not draw verdigris, whereas nickel on brass is likely to do so.

Unless an inner porcelain cover, resting directly on the top of the urn jar, is provided, the steam rising from the coffee condenses on the metal cover of the urn and generates a taste which is communicated to the coffee as the drops fall from the lid into the coffee; besides which the condensation on the metal cover has a tendency to rapidly eat away the cover itself.

Unless the coffee urns are provided with cover lifting cranes the operators are in danger of scalding their hands and arms by the sudden escape of live steam while removing the covers; this crane not only insures the operator against possible accident, but also prevents the cover from being dented by reason of the operator dropping it.

Unless the lip provided for conveying the water into the water jacket is made of cast brass, and not of some light material, it will rapidly deteriorate from constant exposure to rising steam.

Unless the body of the urn is made of 24-lb. copper it is not strong enough to withstand the strain of the weight of the filled urn plus the constant heat during a number of years. A good urn, with occasional repairs, ought to last from fifteen to twenty-five years.

Unless porcelain jar is made from vitreous china (that is, china made from china clay and vitrified at high heat at one firing) it is likely to crack or craze; consequently stoneware jars cannot have the life of the pure china clay jars, in which the vitreous finish is fused into the china, making it a homogeneous mass.

Unless the bottom of the jar is rounded, with the draw-off opening connected to the faucet at its lowest extremity, it is not possible to draw off all the contents without tilting the urn.

A jar made of steel or iron, coated with porcelain enamel, is subject to crazing, with consequent accumulation of coffee grounds in the small cracks produced; because steel or iron has one coefficient of expansion and contraction, while enamel (glass coating) has another, and the heating and cooling processes which any urn has to undergo in operation must in time produce crazing with its attendant evils. Besides which, these minute particles of enamel, which is practically glass, are likely to detach themselves from the base metal and pass through the faucet into the cup and thence into the stomach.

In a battery of elevated urns it is desirable that the feet supporting the water urn should be attached to the top of the base of the coffee urn and not to the body, so that if one of the coffee urns needs repairing it can be removed from the base and sent to be repaired by simply disconnecting the pipes, and coffee can be made in the remaining urn.

Two things not connected with its construction can damage an urn—the pouring of cold water into the porcelain jar when it is very hot, and the burning out of the bottom by failure to put water in the jacket when the water gauge shows it is needed. An enameled metal jar, of course, will not crack when cold water is poured into it when hot, which has been the only argument in favor of its use.

The water urn in a battery which is heated by gas should be made of an outer and an inner shell, with an air space open at the bottom and with open holes near the top, thus insuring that the heat passes all around the water, and preventing condensation on the outside of the urn and consequent discoloration of the plating. In a water urn heated by a steam coil this outer jacket is, of course, not necessary, as the steam coil is placed in the water itself.

In view of the above analysis of the possible weaknesses of coffee urns the following may be taken as a safe specification for the highest quality of urns:

SPECIFICATION

.....coffee urn having a capacity of.....gallons; bodies to be made of 24-lb. cold-rolled copper, coated on inside with pure English block tin, nickel-plated on the outside and polished to a very high luster. The inner receptacle or container to be a vitreous white porcelain steam-tested jar, having rounded bottom and bottom outlet. This receptacle to have separate porcelain cover to prevent steam from striking outer cover. The space between top of jar and outer copper body to be hermetically sealed with a steam-resisting cement. The refilling lip to water jacket to be of heavy cast brass and to have a faucet of extra heavy brass, heavily silver plated inside and outside, and polished; and to have gauge glass attachment for showing contents in inner receptacle. Urn to be fitted with heavy brass nickeled draw-off faucet to water jacket and fitted with gauge glass attachment to show contents in water jacket.

Coffee or tea faucets and top fitting of gauge glass to be provided with clean-out caps, affording easy accessibility for cleaning. Urn to be provided with a cover lifting crane (if desired).

The foregoing applies to urns up to 10-gallon capacity each, which may be grouped into batteries, giving a total capacity of 20 gallons.

Institution steam-jacketed urns of capacity of from 25 gallons each to 150 gallons each will be dealt with in a future article.

Drs. W. R. and J. R. Stringham are opening a hospital in Cheboygan, Michigan.

NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

An Improved Sacral Rest

This is an apparatus to assist in the application of bandages and dressings to the hip, especially of plaster of paris in the region of the hip.

A rest is needed which will add to the patient's comfort and allow sufficient working space and give a feeling

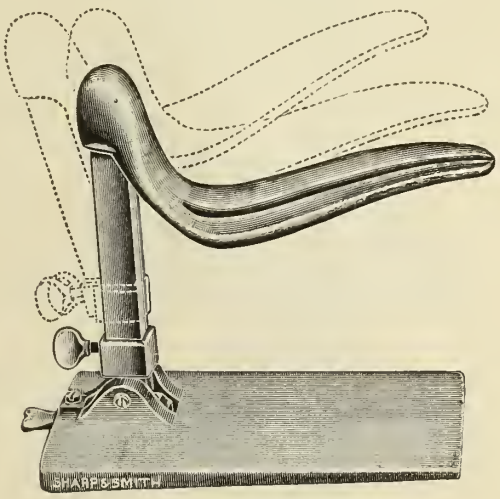


Fig. 1. Dr. Meyerding's sacral rest.

of security during traction; thereby permitting an easy removal and leaving a well fitting cast. Patients not infrequently complain of pain during the application of a cast more than of the disease which required its application.

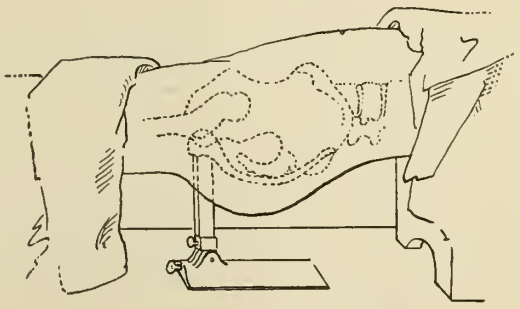


Fig. 2. Method of using the sacral rest.

Orthopedic surgeons find plaster of paris a most serviceable dressing because they have learned from experience to guard against the pitfalls attending its use. Sores due to the pressure may be avoided by padding at the area of contact. The sacrum is one of the most common sites of such sores, mainly the result of flat, ill-fitting

appliances which leave irregular, irritating areas supporting the weight of the body. The parts to be covered can be encased in stockinet. The bony prominences should be well padded with felt, then a single layer of flannel in the form of a bandage; after which the plaster cast may be applied.

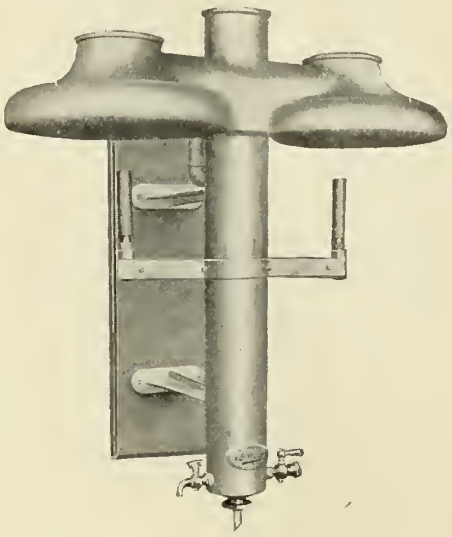
In order to insure perfect contact and avoid pressure pain, the support should conform to the lumbo-sacral curve and allow as large a weight-bearing area as possible. The apparatus is removable and can be left under the cast while hardening takes place. It may be lowered or elevated so as to meet the varying degrees of tilting, such as are found in ankylosis of the hip, and allows traction against the perineum.

This instrument was invented by Dr. H. W. Meyerding.

An Efficient Water Still

While most hospitals are equipped with a water still of some type, it is a great convenience to have distilled water quickly available in the laboratory instead of having to secure it from a distant part of the hospital.

The still illustrated is entirely automatic in its action, and, having a capacity of from 2 to 3 gallons per hour, is of a good size for most laboratory service. The operation of the still is extremely simple. The city water is supplied through the upright column through a condensing tube, and overflows into conical shaped domes or evaporators.



Peerless water still.

In the evaporators the water is transformed into steam. As this steam is pure hydrogen and oxygen, containing no foreign matter, all refuse is left in the evaporator; only the condensed steam, or, in other words, distilled water, reaches the chamber where it is stored. Cool water surrounds the condensing chamber, greatly hastening the action of the still. It is stated that a special burner has been designed, permitting of a large percent of air, thus making the operation of the still economical in the amount of gas consumed.

Intensifying Screens and Kassettes

The intensifying screen in radiography has, during the past few years, come into such general use that the practicability involved and the method of using screens is appreciated by most operators. And in all new methods or devices, experience has brought forth improvements both in construction of screens and kassettes, as well as in the technic in using them.

Briefly, the purpose of the screen is, as its name signifies, to intensify the action of the emulsion on the x-ray plate. Most screens are composed largely of tungstate of calcium, prepared and mounted, together with other chemicals, on bristol board. Tungstate of calcium has the peculiarity of fluorescing blue when exposed to x-rays and as the dry plate is extremely sensitive to blue light, if the intensifying screen is placed in contact with the plate, the resulting negative will show much more contrast, due to the blue light, than otherwise. In fact, it is claimed by various makers of screens that a reduction in the time of exposure of anywhere from 60 to 90 percent can be accomplished by the screen method as compared with the former method of using no screen.

Radiologists are, of course, continually striving for better results, especially in such cases as radiographs of the involuntary parts. Thus, if a radiograph can be made of the stomach, heart, intestines, etc., in a short enough time so as to show practically no movement, the resulting radiograph will be extremely sharp in its outline.

Intensifying screen and kassette.

This is also true in cases of children, nervous individuals, etc., as the operator can in most instances complete his work before the "stage of excitement" on the part of the patient has arrived.

There is, too, a very considerable advantage in the use of these screens from a purely financial standpoint, in that the x-ray tube is used but a fraction of the time ordinarily required, all of which means that a more uniform vacuum can be maintained and considerable life added to the tube.

Many of our hospital superintendents have invested in intensifying screens only to have a report, after the money is spent, that the screen is not being used because the results are not satisfactory. Strange to say, in most cases where such complaints are looked into, the fault lies more often in the kassette (screen holder) or in the technic employed in the use of the screen, than in the screen itself.

Several years ago, when this method was still new, manufacturers used a wooden case or frame, and in fact to a large extent this practice is still followed abroad. The great objection to wooden kassettes is the likelihood of their warping; the result then is that it is impossible to maintain even pressure between the screen and the plate. In this case the resulting negative will show spots where the screen has failed to make contact. Again, in some instances, on account of the uneven shape of the kassette, plates have been broken, damaging screens.

Several types of metal kassettes have been designed by American manufacturers, but the one here illustrated seems to be the last word in kassette construction. Several entirely new features are incorporated, making the kassette serve a double purpose. The material used is brass and aluminum; there being no wood, tacks or screws, there can be no warping or rusting. The base is of such design that it is flexible, so that any thickness of plate can be used. There is a very considerable variation in the thickness of different makes of x-ray plates; moreover, the use of a kassette without intensifying screen frequently offers advantages. The range of adaptability of the base of this kassette is sufficiently great for the thickest x-ray plate with screen, or the very thin x-ray plate without screen to be used.

The detachable hinged base is an entirely new feature of very great importance. This all-metal hinge is vastly superior to the leather hinge, as ordinarily used, and in addition is more effective and more durable. It holds the base rigidly in upright position while the plate is being placed and guides it into the frame without the side movement which occurs in many other types, and is so likely to scratch the delicate filament of the plate. When opening the kassette the base may be entirely detached by simply lifting it vertically.

This detachable method of hinging the base makes it possible to employ two bases with one frame (alternately), one with an intensifying screen attached, the other with plain felt cushion. This is a feature that every roentgenologist will hail with delight.

Differential Stethoscope for the Examination of the Heart and Lungs

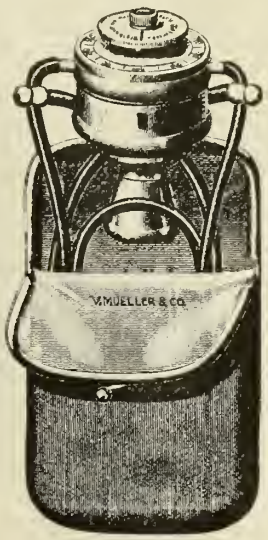
Designed by Dr. Bock.

The stethoscope illustrated represents an improvement in that by means of a regulator the sound waves of the heart strokes can be lowered to Fig. 0 on the indicator dial, the degree of deadening of sound being noted on a scale. The possibility of reducing the sound waves affords considerable advantage in diagnostic examining of the different pathological changes of the muscular system of the heart or of the blood vessels.

The open instrument is placed over the same area as is usually covered by the ordinary stethoscope, and is then slowly screwed down until the respective sound is lost. The number of the scale to which the arrow points is then noted. With a normal heart, the second A-sound is about one-third less than the first M-sound, and the second P-sound is slightly (5-10) less than the second A-sound, as, for instance: 90-60-55, 60-40-35.

According to Dr. Bock, the first mitral sound is a comparative sound and indicates whether the left ventricle is enlarged or insufficient in its musculature; at the same time it indicates the strength of its contraction. The strength of the heart-muscle may be deduced from the first aortic sound as well as from the relations of the sounds to each other, the more they correspond to the normal relations above mentioned. The mitral sound, if higher than the first mitral, indicates angiospastic conditions (spasm of the vessels), more particularly within the domain of the splanchnicus.

If the second mitral sound, as well as the second aortic sound, is accented, the kidneys are sure to be diseased and casts will be found, though albumin may be absent. If the second aortic sound shows a considerable increase; that is to say, if it is greater than the first mitral; it shows decreased resistance to exist in the peripheral circulation, and usually arteriosclerosis. The patient's age, condition of the pulse, subjective statements, size of heart, blood pressure, must always be considered. Slight difference in the registration to the three sounds to each other



Differential stethoscope.

is always due to a weak heart muscle. The results, i. e., the registration, are obtained while the patient stands. The first mitral sound often changes, when the patient is lying down, while the other sounds (second aortic and second pulmonary) remain unchanged whether standing or reclining.

For auscultatory percussion the stethoscope is placed in the center of the sternum, the indicator at 50 and the method is followed as with the ordinary instrument.

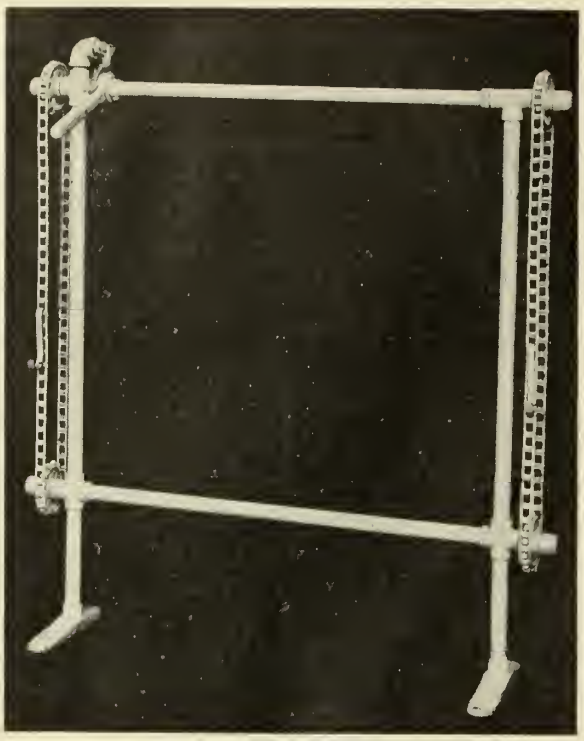
If there is dullness in the lower lobe of the lung, the physician may differentiate this, whether due to a thickened pleura or consolidation. In the case of the thickened pleura there is no difference on auscultatory percussion in the percussion note of the right and left side, whereas with consolidated lung tissue the difference is manifest and markedly exaggerated.

A Device for Elevating Beds

Up to the present time one of the most annoying little problems in the hospital has been the elevation of beds for the purpose of placing patients in the Fowler and other surgical and medical positions. All the apparatus that has been offered on the market has required the lifting of beds and the fixing of them there by two or more people, and wards and rooms have been littered up with bricks and blocks and old chairs used for this purpose.

There is now offered what seems to be a cure for this difficulty—a device called the Ernest bed jack, which is composed of a frame and two endless chains with a hook in each, as shown in the illustration, and by a pump movement one nurse, after arranging the hooks in the chains

and under the cross rod of the bed, can lift the patient to any desired height and lock the device there.



The Ernest bed jack.

It appears that the Ernest bed jack has been tried out in a number of hospitals and has met with the unqualified

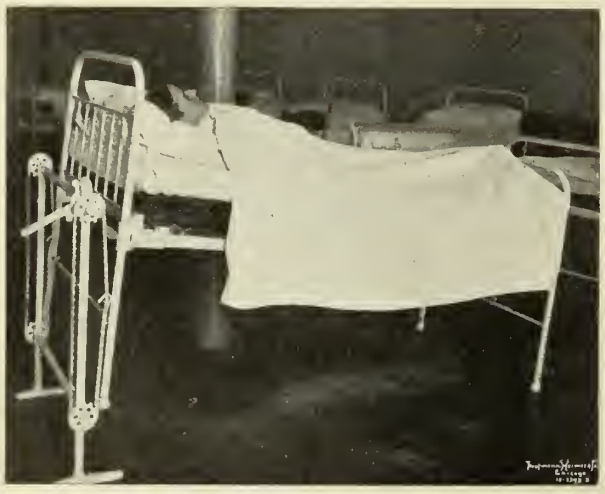


Fig. 2. The Ernest bed jack in use.

endorsement of nurses and orderlies and physicians who are interested in the physical administration of the hospital.

WASHINGTON UNIVERSITY DEDICATES MEDICAL SCHOOL

St. Louis Seat of Learning Entertains World Notables in Science—Two-Day Program and Banquet

The new buildings of the Washington University Medical School, at St. Louis, erected at a cost of $1,200,000, were formally dedicated with an elaborate program covering the two days of April 29 and 30. The immense structures comprising the new school, combined with the new Barnes Hospital, the Children's Hospital and St. John's Hospital adjoining, form one of the largest groups of buildings in the world devoted to medical and surgical purposes. The medical school holds the teaching privileges in the three hospitals mentioned.

The dedication program included a dinner to delegates from forty-three colleges, universities and other institutions, among whom were the following: The University of Edinburgh, Professor Lindsay Stephen Milne, University of Kansas; The University of Lisbon, Professor Marck Athias; Victoria University of Manchester, Professor Thomas Wingate Todd, Western Reserve University; Harvard University, President Abbott Lawrence Lowell and Professor Charles Allen Porter; Yale University, Dean George Blumer; University of Pennsylvania, Provost Edgar Fahs Smith and Dean William Pepper; Columbia University, Professor Julius Sachs; Brown University, Mr. Augustus Levi Abbott; Dartmouth College, Professor Howard Nelson Kingsford; University of Pittsburgh, Dean Thomas Shaw Arbuthnot; College of Physicians of Philadelphia, Dr. Richard Hickman Harte; University of Maryland, Professor John Cohn Hemmeter; St. Louis University, Dean Hanau Wolf Loeb; Medical Corps of the United States Army, Captain Thomas Dupuy Woodson; Western Reserve University, Dean Carl August Hamann; Illinois College, Mr. Edward Field Goltra; Tulane University of Louisiana, Professor Rudolph Matas; Knox College, Mr. George Appleton Lawrence; University of Michigan, Acting-Dean Guy Lincoln Noyes; Grinnell College, President John Hanson Thomas Main; New York Academy of Medicine, Dr. Edward Dix Fisher; State University of Iowa, Dean Lee Wallace Dean; Detroit College of Medicine and Surgery, Professor Charles Godwin Jennings; Cornell University, Dean William Mecklenburg Polk; Purdue University, Professor Oliver Perkins Terry; University of Minnesota, Professor James Edward Moore; University of Cincinnati, Professor John Ernest Greiwe; Johns Hopkins University, Professor Theodore Janeway; Medico-Chirurgical College of Philadelphia, Professor William Louis Rodman; Leland Stanford Junior University, Dr. Harold Phillip Kuhn; Rockefeller Institute for Medical Research, Dr. Simon Flexner; Memorial Institute for Infectious Diseases, Dr. James Bryan Herrick; Council on Education of the American Medical Association, Dr. Arthur Dean Bevan; American College of Surgeons, Dr. Major Gabriel Seelig.

Besides the delegates many other prominent medical men and educators were in attendance.

Addresses were delivered by Dr. Eugene Lindsay Opie, dean of the medical school; Dr. William Henry Welch, professor of pathology, Johns Hopkins University; Abbott Lawrence Lowell, president of Harvard University; Henry Smith Pritchett, president of the Carnegie Foundation for the Advancement of Teaching; George Edgar Vincent, president of the University of Minnesota; Dr. William Townsend Porter, professor of comparative physiology, Harvard University; Dr. Robert James Terry, professor of anatomy, Washington University; Dr. Fred Towsley Murphy, professor of surgery, Washington University; Dr. George Dock, professor of medicine, Washington University; and Major General William Crawford Gorgas, surgeon general, United States Army.

The Union Hospital, of New York City, contemplates the erection of a new home at 188th street and Valentine avenue.

Program for Hospital Sisters' Conference

There will be a meeting of representatives of the Sisters' Hospitals of the Northwest in Milwaukee, on June 24, 25 and 26.

The purpose of the meeting is to create a sectional organization of the Sisters' Hospitals, into an association of their own.

The following comprehensive program is planned for the three days' meeting:

THURSDAY, JUNE 24

9 a. m.—Mass and Sermon, Sebastian G. Messner, Archbishop of Milwaukee.

11 a. m.—Address, Dr. John A. Hornsby.

11:30 a. m.—Paper, "Principles of Hospital Construction," Mr. Meyer J. Sturm, Architect.

RECESS

2 p. m.—Business meeting, organization and adoption of constitution.

3 p. m.—Paper, "Significance of Hospital Rating," Mr. F. E. Chapman. To open discussion, Dr. John R. McDill.

FRIDAY, JUNE 25

9 a. m.—Paper, "Staff Organization," Dr. R. E. Castelaw. To open discussion, Dr. C. A. Evans and Dr. John M. Beffel.

10 a. m.—Paper, "Hospital Equipment," Dr. Louis M. Warfield. To open discussion, Dr. W. E. Fairfield.

11 a. m.—Exhibits of laboratory equipment and demonstration of some tests, in the Marquette University School of Medicine laboratories. Prof. C. J. Farmer, Dr. W. A. Fansler and Dr. L. M. Miles.

RECESS

2 p. m.—Paper, "The Training School," Dr. Joseph L. Baer. To open discussion, Miss Gertrude I. McKee, R. N.

3 p. m.—Symposium, Care of Patients: Paper 1, Dietetics, Miss Ruth Minturn, B. S., County Hospital; Paper 2, Operating Room, Before, During and After Operation, Including Anesthesia, Dr. H. O. Collins; Paper 3, Nurses' Treatment of Patient in Private Room and Ward, Miss M. E. Good, R. N.

Discussion: Dr. F. J. Gaenslen, Dr. L. A. Fuerstman and Dr. C. Echols.

SATURDAY, JUNE 26

9 a. m.—Symposium, Educational Function of the Hospital: Paper 1, A Training School for Interns, Dr. L. M. Warfield; Paper 2, The Teaching Function of the Staff, Dr. L. F. Jermain; Paper 3, The Hospital's Duty to Medical Science for the Furtherance of Human Health—by Research, Production of Papers, Library and Museum, Dr. John L. Yates.

11 a. m.—Paper 4, The Hospital and Social Service, Miss Gertrude M. Knowlton, R. N. in Massachusetts. Closing Remarks, Charles B. Moulinier, S. J.

Some two months ago a preliminary meeting was held of representatives of all the Sisters' Hospitals in Milwaukee, and more than sixty representatives were in attendance, and it is expected that many representatives of the Sisters' Hospitals of the Northwest will attend the June meeting, the representatives to be made up of Sisters in charge of hospitals, the heads of the technical departments, including the training school, the members of the medical staffs of hospitals and the chaplains.

In addition to the above program, it is planned to create a constitution and set of by-laws for the new association, and to elect officers for the first year.

The Sisters are going at the work of creating their new association with great enthusiasm; they intend that their hospitals shall be in every way up to the demands of modern medicine in all the scientific departments, and in the care of the sick in every respect.

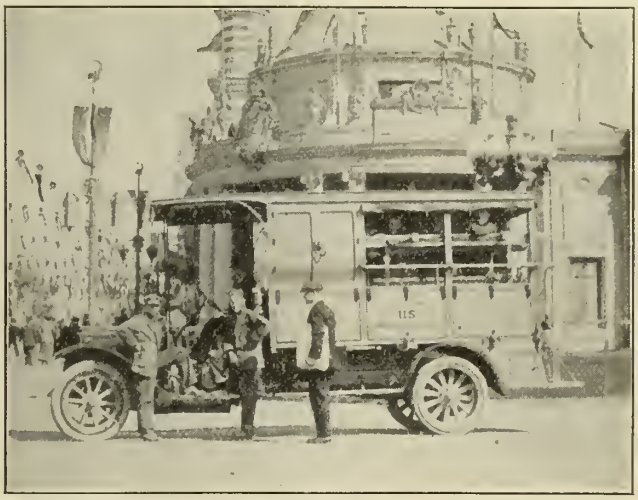
It is understood that, just as soon as the Northwestern Sisters' Hospital Association is well launched, and its success assured, the movement will be broadened by the creation of like associations in other sections of the country, with the eventual intention to have a nation-wide, or continent-wide, association of these institutions.

TELEPHONES IN MINE RESCUE WORK

With Oxygen Helmet and Specially Devised Throat Telephone Life Saving Is Greatly Aided

Telephone communication between the advance or rescue party and those outside of the mine, in the case of mine accidents, is one of the features of the daily demonstration of the United States Bureau of Mines Rescue Crew conducted in connection with the exhibit of the Bureau at the Panama-Pacific Exposition at San Francisco.

This exhibit is housed in the Palace of Mines and Minerals, and consists, primarily, of a model mine constructed under the floor of the building, in which are installed on exhibit appliances the use of which promotes safety and efficiency in mine work.



Motor car of the rescue crew, U. S. Bureau of Mines exhibit, Panama-Pacific Exposition.

One of the features of this exhibit is the daily rescue drill by a crew of four or five men under the personal supervision of Engineer Edward Steidel, who is in charge of the Bureau's exhibit. Twice a day, in response to a telephone message to the effect that an explosion has occurred in the mine, the rescue crew in their especially designed motor car rush through the Exposition Grounds and up to the entrance of the building, and, after putting on oxygen helmet breathing apparatus and Western Electric mine rescue telephone apparatus, they go into a glass-walled room located on the main floor of the building. This room is filled with smoke and gas fumes. The crew demonstrate that they can actually breathe and work in the midst of smoke and poisonous gases. They then go below into the mine and bring out a supposedly injured miner, to whom they administer "first aid" treatment.

All the time the rescue crew are in the smoke-filled room and in the mine they are in constant communication with the outside by means of the telephone equipment. Each member of the rescue party wears strapped to his

Rescue crew, ready for work, at the U. S. Bureau of Mines exhibit, Panama-Pacific Exposition.

throat a small, specially-designed transmitter and a watch-case receiver strapped to his ear. This apparatus is connected with a coil of flexible wire, which is carried by the chief of the party on his belt, which pays out as the party advances. The other end of this wire terminates in telephone equipment worn by the person in charge of directing the rescue work at the rear or on the surface.

The reason for this special equipment is that a man wearing any of the different types of oxygen helmets, which cover his mouth, cannot use the ordinary type of telephone transmitter. The throat transmitter furnished transmits speech practically as well as the standard type of telephone instrument and is very small and light and is provided with a soft rubber cup, which assists in holding it firmly against the throat.

In the past, many losses of life have occurred to members of rescue parties which unquestionably could have been avoided if there had been some means of communicating with the rear to advise when in need of aid, which could easily have been given. Another feature of importance is that such an intimate and constant communication with another human being on the outside encourages the rescuer and prevents those sudden waves of overpowering fear which everyone is more or less subject to in times of great danger, particularly when in the darkness and alone.

The mine rescue telephone equipment demonstrated at the Exposition satisfies this need to the fullest extent and its development has been greatly assisted by suggestions and consultations with the Government Bureau of Mines and private mining companies throughout the country.

The New Brantford (Ont.) General Hospital was formally opened April 15.

NEW HOSPITAL FOR KALAMAZOO

Sisters of St. Joseph Will Build $200,000 Modern Structure to Take Place of Present Borgess Hospital

Architect C. A. Fairchild, of Kalamazoo, Mich., has completed plans for a hospital to be erected in that city by the Sisters of St. Joseph, at a cost of $200,000. The new building is to take the place of the Borgess Hospital, which will be retained for emergency cases. The main building of the new hospital will be 220 by 56 feet and six stories high. A wing, 140x48, two stories and basement, will be joined at the rear. The structure will be fireproof throughout, the only wood used being the doors and window sash. Reinforced concrete, steel, brick and stone will compose the exterior construction, while marble, tile and concrete will be used throughout the interior. There will be no wards. Every patient will have a private room, and every desirable convenience to insure the comfort of patients and the perfect working of the hospital staff will be provided. The water system has been given special attention. The water supply will be obtained from two eight-inch wells by the pressure system and it will be possible to pump 3,000,000 gallons daily. Architect Fairchild traveled more than 10,000 miles inspecting hospitals preparatory to planning this up-to-date institution.

The Knights of St. John, an order founded to care for the sick and wounded during the first crusade, maintained, after the conquest, a hospital at Jerusalem said to accommodate 2,000 patients. These knights established many priories in various parts of Europe, but military features developed, the organization grew very rich and powerful, and, swerving from its original purpose, degenerated and fell into disrepute.

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